SAMSUNG
REFRIGERATOR TRAINING

Brought to you by:

MSA
Marcone Servicers Association

www.msaworld.com

Presented by: Rick Kuemin, MSA Training Director

Cool Refrigerators

Refrigerator Model Number Nomenclature

- RF = French Door
- RS = Side by Side
- RB = Bottom Mount Freezer
- RM = Four Door

Questions or comments? Please e-mail richard.kuemin@marcone.com

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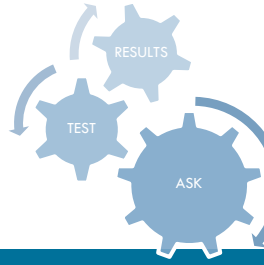
Samsung HA Warranty

- **ALL Warranties are subject to change, always verify.**
- 1 Year Parts & Labor Base Warranty, Labor may not apply over 1 year
- Some items may have longer Warranties, Check Owners Manual or 800-SAMSUNG
  - Refrigerator Sealed System Five Years Parts & Labor
  - Laundry 2 years on Control Boards, 3 years on Stainless tubs, 10 years on DD washer motors
  - M/W oven 10 years on Magnetron Tubes
  - Range 5 years on Glass Cooktop and Radiant Surface Units
  - D/W 5 years Printed Circuit Board, Racking and Lifetime Stainless Door Liner & Tub for leakage.
- No Damage Warranty, Consumer or Stock
- One Year, One Call for Consumer Education
- Stock Repair, 24 months from date of manufacture
- Two Stock Repairs allowed under Warranty
- Refurbished Product has no Warranty

Refrigeration Troubleshooting

What's done when tech arrives at home?



- Talk to the Consumer, don't trust the work order
- Talk to the Fridge, the Diagnostic Mode is the most valuable troubleshooting tool you have for troubleshooting a refrigerator. **When you are at the product this MUST be the first test you should do.**
- Removing power will erase Defrost Fault Codes, for 4-6 hours.
- When a Samsung refrigerator is powered up it performs a Self Diagnosis, if an **open or shorted sensor** is detected it will **lock the display** and **flash the code** in the display. The refrigerator may have **no operation**, or operate in the **emergency mode**. Other faults detected will usually not lock the display or stop operation. To restart operation put into Manual Diagnostic Mode. Sensors that are off value, but not shorted or open, will not bring up a fault code.

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Samsung Technology Refrigeration

- Twin Cooling
- Temperature/Humidity Control with Stepper Valve
- Sensors Control Everything
- Computer Controlled DC Fan Motors
- LED Lighting (changing over quickly)

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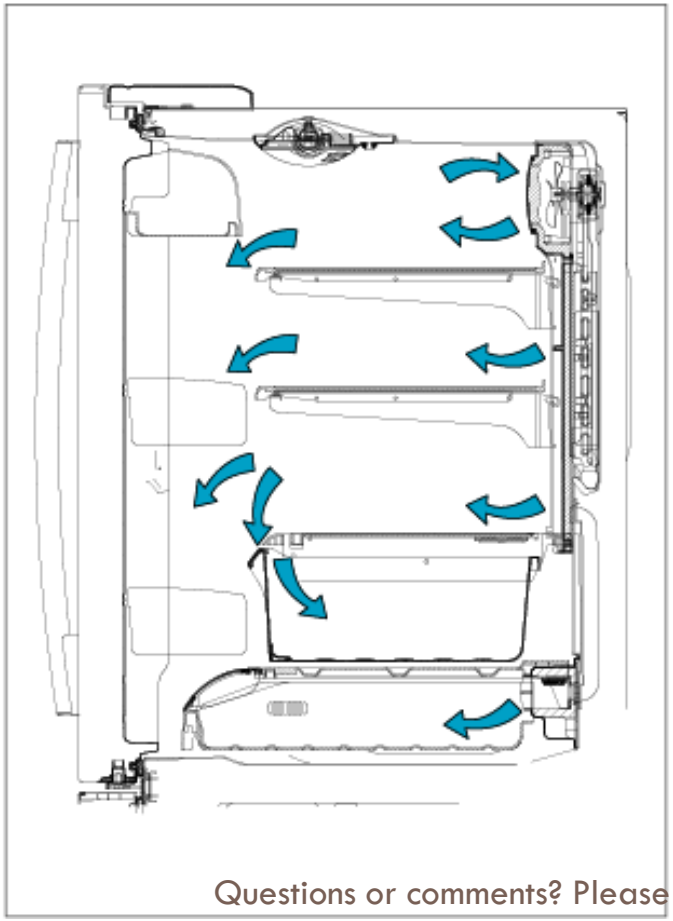
Twin Cooling Design

French Door Internal cool air circulation path

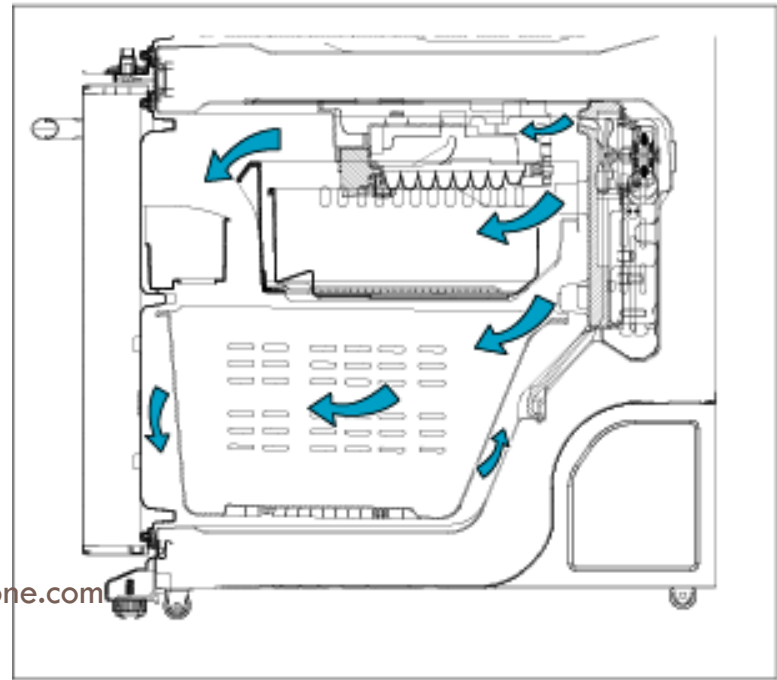
Refrigerator



Advantages

- More accurate control of temperatures
- No air exchange between compartments
- Energy efficiency
- Fresh Food Humidity

Freezer



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Compartment Temperature Sensor

TESTING

- To show actual Temps, on older models, **after checking Fault Codes (Why)**, power off & on. The display will show actual compartment temperature for a short time, check the actual temperature at the top rear of the compartment and compare readings. Newer models, press TEMP pad, set temp displays, then actual displays before going blank. Why could actual temp be different?
(power freeze/cool, before defrost, or plugged in only a short time).

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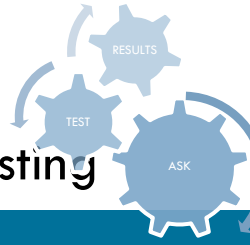
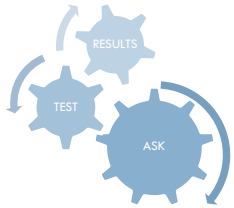
Refrigeration Troubleshooting



- The **Forced Operation Mode** is a valuable troubleshooting tool for testing compressor operation & some fan operation.
- **Forced Freeze (FF) Mode**
  - The **compressor is started** without the 5-7 minute delay
    - You can accurately check defrost sensor voltages in this mode with the cold evaporators.
    - You can check the compressor current draw or check voltage at the main PCB in this mode.
  - **Some fans will be turned on** in this mode, to allow voltage testing. The door switches still control the fan operation. (Fridge fan is still controlled by the compartment sensor, Cond fan by the ambient sensor) .
  - **Inverter Compressors** (most models), 3 speeds (**FF1, FF2, FF3**) can be selected and check some fans, current draw or compressor control voltage in the Forced Operation. (Fridge fan is still controlled by the compartment sensor, Cond fan by the ambient sensor)

Refrigeration Troubleshooting



- The **Forced Operation Mode** is a valuable troubleshooting tool for testing defrost operation.
- **Forced Defrost Mode**
  - The Fridge (**RD**) defrost function can be activated (**Some Models**).
    - You can check the Fridge defrost current draw or defrost voltage at the main PCB in this mode.
  - All defrost function & Inverter Compressors
    - You can check All (**FD**) defrost current draw or All defrost voltages in this mode (**All Models**).
- **Forced Defrost will warm the evap coil and defrost sensor. You must run the compressor after to get an accurate defrost sensor voltage test.**

Refrigeration Troubleshooting

- The Forced Operation Mode **"Display"**
  - Inverter compressor models will show the forced function in the display **FF1, FF2, FF3, FD** (all defrost).
  - Most standard compressor models manufactured after 2007 will show the forced function in the display **FF, RD, FD**
  - Most models 2006 and older will have a **blank display** during the forced mode, wait **5 seconds** between button pushes so you know what mode you are in ***(FF, RD, FD***). If in doubt, unplug unit and start over.

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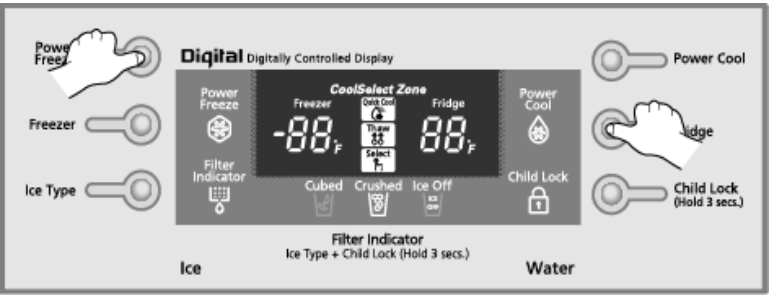
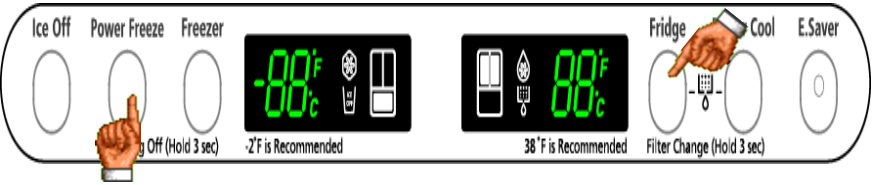
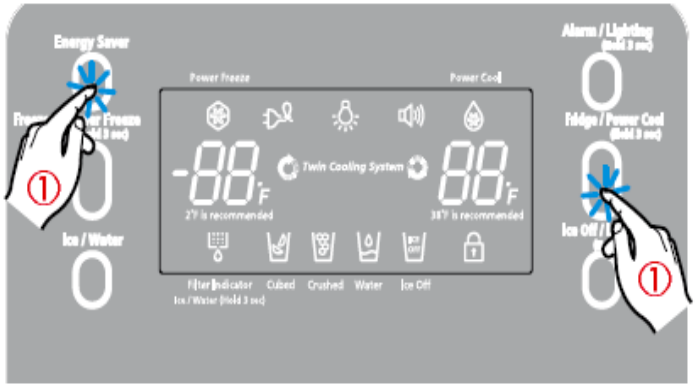
Forced Operation- Standard Compressors







For Test Mode

Press both buttons *simultaneously* 'till it beeps and goes blank!

Should be silent when two buttons are pushed simultaneously, any sound --start over

Wait 5 seconds between button pushes

Cancellation, unplug unit

Press Freezer button One time at the Test Mode to Force Compressor

Press Freezer button Second time for Forced Defrost of Fridge

Press Freezer button a third time to Force Defrost for Fridge & Freezer

Forced Compressor → ***Forced Defrost for Fridge*** → ***Forced Defrost for both compartment***

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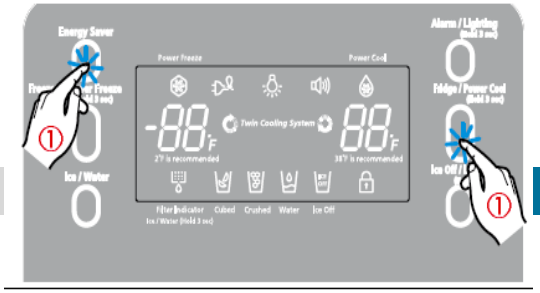
Inverter Compressor Forced Mode



Press Freezer button One time at the Test Mode to Force each Compressor test then--

Forced Compressor High

Compulsion working 1 : 3600RPM

Forced Compressor Mid

Compulsion working 2 : 2450RPM

Forced Compressor Low

Compulsion working 3 : 2050RPM

For Test Mode

Press both buttons simultaneously for 8 seconds!

Wait 5 seconds between button pushes

Simultaneous manual defrost (**fresh food and freezer compartments**) function

Press Freezer button a 4th time to Force Defrost for ALL Compartments

Forced Defrost for ALL compartments

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Forced Mode for Single Evap units

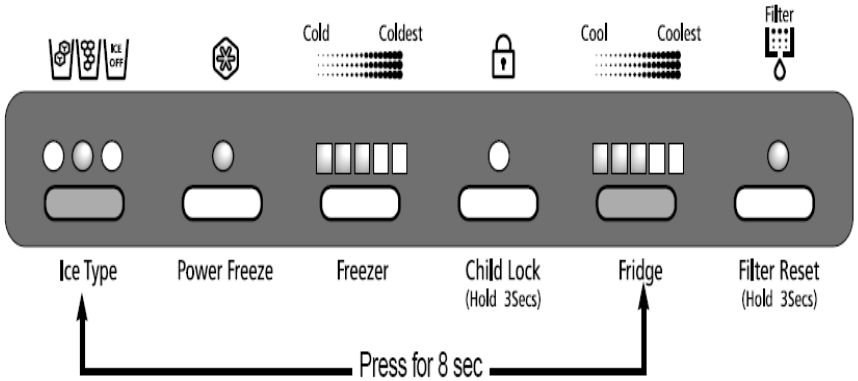
Use Freezer Key as a Test Key

Wait 5 seconds between button pushes

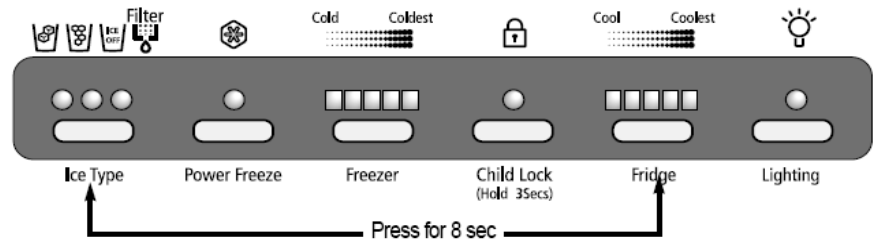
7-11) TEST (FORCED OPERATION / FORCED DEFROST)

- When pressing Refrigerator temp set KEY and ice selection KEY in PANEL PCB simultaneously for more than 8 sec. PANEL DISPLAY will go off and it moves onto TEST MODE. At this point, although Freezer/Refrigerator temp set KEY, quick freezing KEY, and ice selection KEY are pressed, it operates by TEST KEY.
- When pressing TEST KEY, Test function shall be changed in the order as Forced Operation ---> Forced Freezer Defrost---> Cancellation(normal operation)---> Forced Operation. If functions are canceled during the operation of TEST function, it is most desirable to turn off the power and turn it on again.

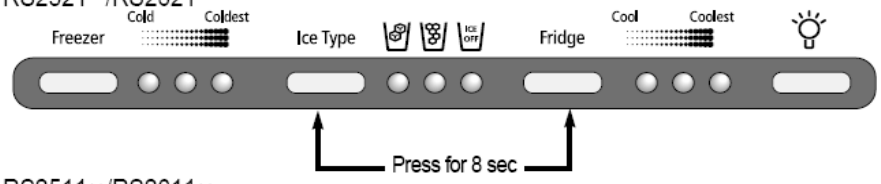
RS2630SW/XAA (for Best Buy)



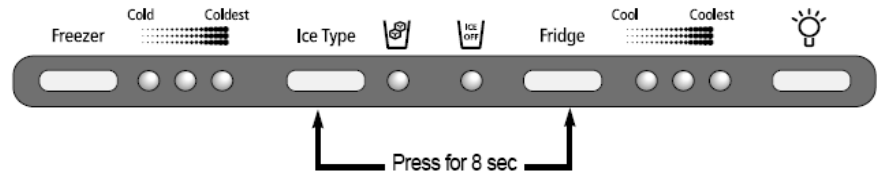
RS2531**/RS2631**



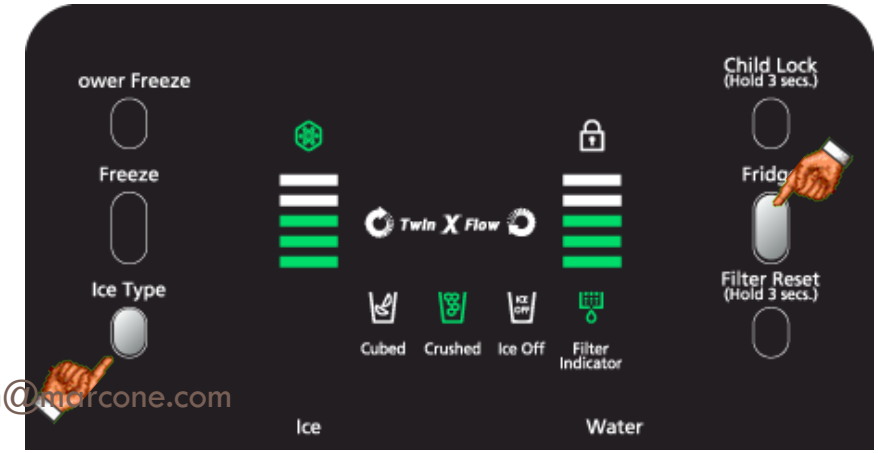
RS2521**/RS2621**



RS2511**/RS2611**



RS2530**



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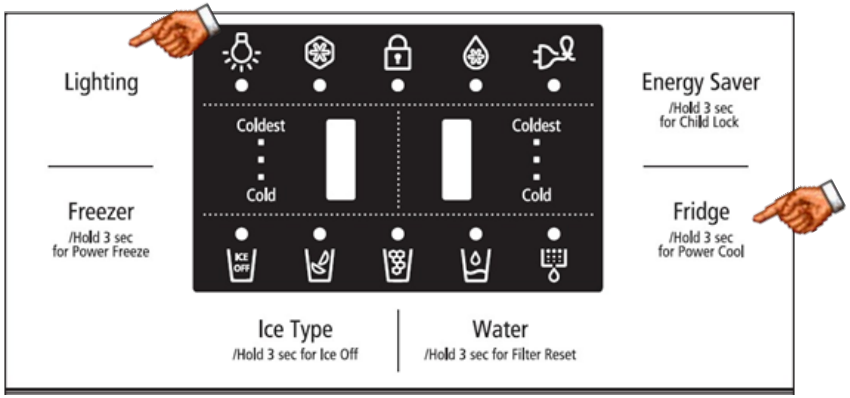
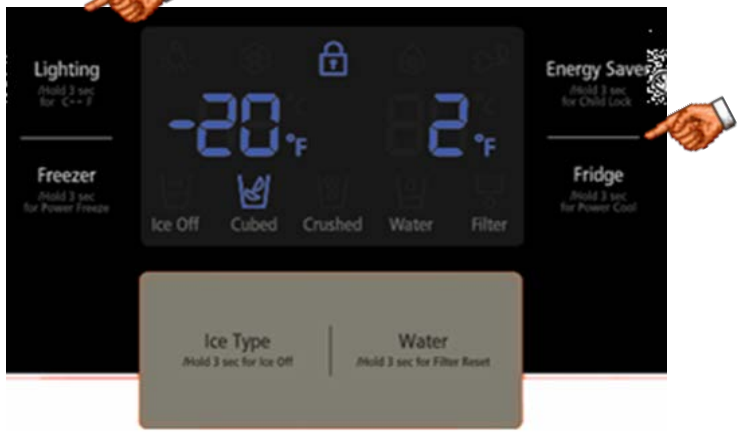
Forced Mode for 2010 units

RS261MD, RS263TD



RS263TD is an inverter compressor, but will only do **FF, RD, FD**

RS265TD, RS267TD



FF1, FF2, FF3, FD

RF4287HA

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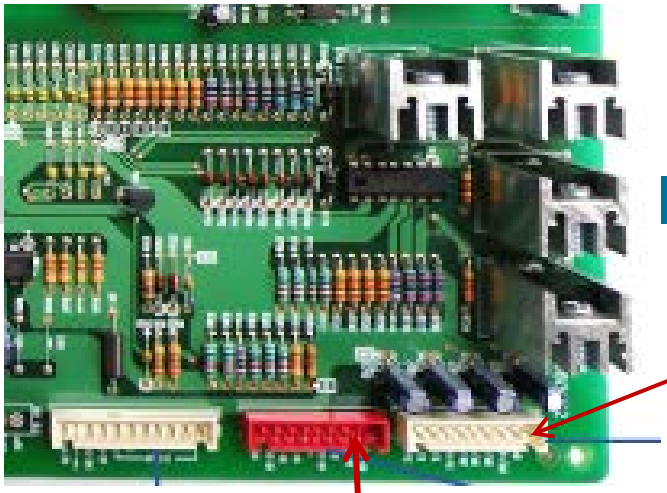
How to Read PCBs



CN76 F, R, C Fans
2-1 Ice Room Fan (Blk-Gry)7-11vdc
3-1 F Fan (Yel-Gry) **7-11vdc**
4-1 R Fan (Org-Gry) **7-11vdc**
5-1 C Fan (S/Blu-Gry) **7-11vdc**
6 Ice Room Fan FG(Pnk)
7 F Fan FG(Brn)
8 R Fan FG(Red)
9 C Fan FG(Blu)

Connectors for measuring voltages

Component to be measured

Nominal voltage reading to be expected

CN30 Sensors & Switches
4-(CN76-1) F Def Sensor (Org-Gry) 2.3~4.2vdc

Pin (Connector) numbers for meter leads to measure voltage

Wire colors for meter leads test points

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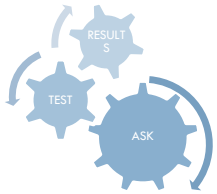
FAN MOTORS



DC Fan Motors

- Brushless DC Fan motors are used to save energy. The fans operate at two speeds. **High** when the ambient temperature is high and **Low** when the temperature is low. Generally, it is operated in the High mode during the day and in the Low at night.

  This circuit design is to protect the Main PCB from a failed fan motor.
  Fan speed information is read by the Main PCB. If the fan speed exceeds 600 RPM or the speed is too slow, or stopped, the fan drive circuit is disabled, after 10 seconds the circuit tries again with 3 seconds of DC voltage
  If the fan continues this activity for 5 cycles (10 seconds off 3 seconds on) then fan drive circuit is disabled for 10 minutes.

A/C Fan Motors

- These motors operate on 120 vac from a relay on the main PCB. A 5 dc voltage is switched on and off by the door switch for the main PCB to activate the fan relays

Compartment Fan

- A/C fan motors. With a closed door switch the sensor calls for cold and activates the relay, (delayed from 10 – 60 seconds).

- DC fan motors. With a closed door switch the sensor calls for cold and the main PCB activates the DC voltage to the motor, (delayed from 10 – 60 seconds).

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Defrost Cycle Timing

	Timer Defrost	Adaptive Defrost	Adaptive Defrost
Model Series	**First Defrost Cycle, Both Fridge & Freezer**	**Defrost Cycle Fridge only**	**Defrost Cycle Fridge & Freezer**
RSG	6 hrs, Pause Time 10 minutes	6~12 hrs (varies according to conditions)	12~24 hrs (varies according to conditions)
RS	4 hrs, Pause Time 10 minutes	6~12 hrs (varies according to conditions)	12~24 hrs (varies according to conditions)
RF	6 hrs, Pause Time 12 minutes	6~17 hrs (varies according to conditions)	12~34 hrs (varies according to conditions)
RFG	6 hrs, Pause Time 12 minute	6~11 hrs (varies according to conditions)	12~23 hrs (varies according to conditions)
RB 2009	6 hrs, Pause Time 12 minutes	6~11 hrs (varies according to conditions)	12~23 hrs (varies according to conditions)
RB Pre 2009	4 hrs, Pause Time 10 minutes	6~11 hrs (varies according to conditions)	12~22 hrs (varies according to conditions)
RS2630 RS2530	4 hrs, Pause Time 7 minutes	N/A	6~11 hrs (varies according to conditions) * Single Evaporator in Freezer

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Defrost Operation

- All new production (except RB series) uses Sheath Heaters

Defrost cycle is initiated by the main PCB.

- 120vac is supplied to the defrost heater circuits, for the Fridge and/or for the Freezer
- **After 90 seconds,** the heaters remain on until the defrost sensor voltage tells the PCB to terminate the cycle.
  - The PCB shuts off the heater at Sensor temps 50F in Freezer, and 63F in Fridge, after the main PCB initiates the cycle.
- The Thermal Fuse and/or Bi-Metal is the fail safe for this circuit
  - The Thermal Fuse or Bi-Metal is in series with the defrost heater for protection (140 degree) for failure.

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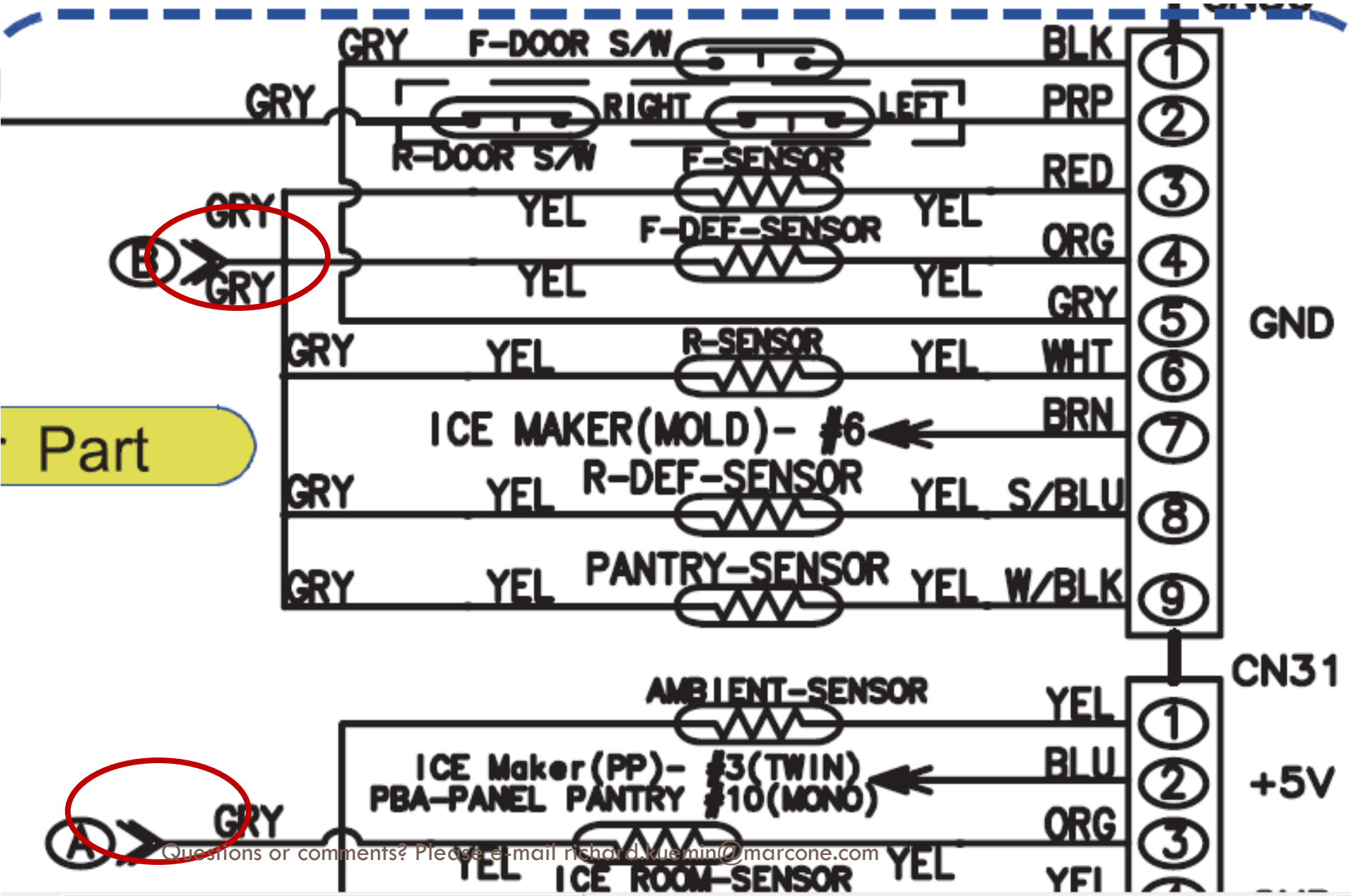
Sensor Common



Part

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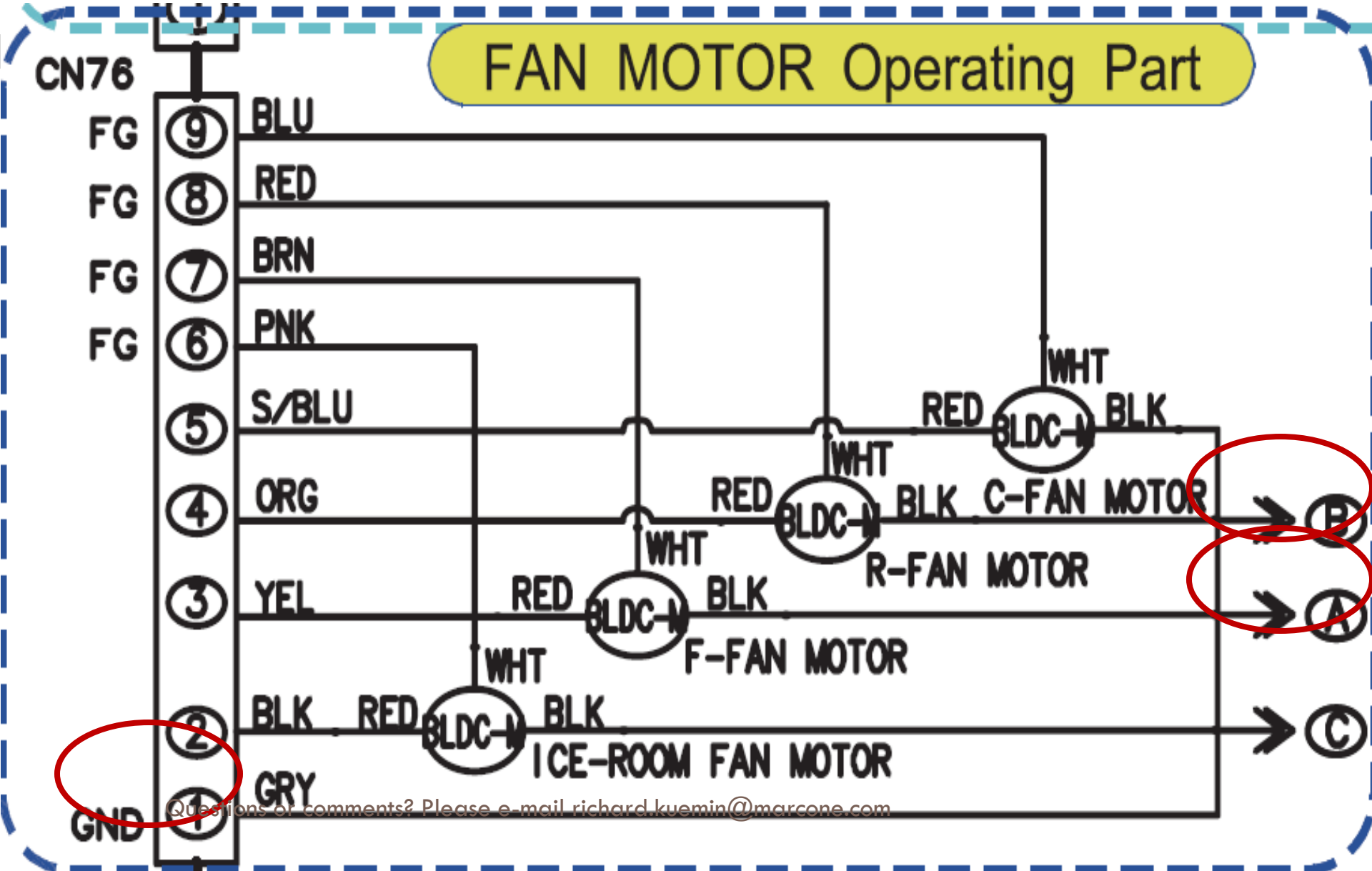
Sensor Common



Temperature/Resistance/Voltage Chart - ALL Fridge Sensors

Temp. (°F)	Resistance(kΩ)	Voltage (V)	Temp. (°F)	Resistance (kΩ)	Voltage (V)	Temp. (°F)	Resistance (kΩ)	Voltage (V)
-43.6	98.9	4.54	12.2	21.4	3.41	68.0	6.01	1.88
-41.8	93.7	4.52	14.0	20.5	3.36	69.8	5.79	1.83
-40.0	88.9	4.49	15.8	19.6	3.31	71.6	5.58	1.79
-38.2	84.2	4.47	17.6	18.7	3.26	73.4	5.38	1.75
-36.4	79.8	4.44	19.4	17.9	3.21	75.2	5.19	1.71
-34.6	75.7	4.42	21.2	17.2	3.16	77.0	5.00	1.67
-32.8	71.8	4.39	23.0	16.4	3.11	78.8	4.82	1.63
-31.0	68.2	4.36	24.8	15.7	3.06	80.6	4.65	1.59
-29.2	64.7	4.33	26.6	15.1	3.01	82.4	4.49	1.55
-27.4	61.5	4.30	28.4	14.5	2.96	84.2	4.33	1.51
-25.6	58.4	4.27	30.2	13.9	2.90	86.0	4.18	1.47
-23.8	55.6	4.24	32.0	13.3	2.85	87.8	4.03	1.44
-22.0	52.8	4.20	33.8	12.7	2.80	89.6	3.89	1.40
-20.2						91.4	3.76	1.37
-18.4						93.2	3.63	1.33
16.6						95.0	3.51	1.30
-14.8						96.8	3.39	1.27
-13.0						98.6	3.28	1.23
-11.2	39.2	3.99	44.6	10.0	2.50	100.4	3.17	1.20
-9.40	37.4	3.95	46.4	9.60	2.45	102.2	3.06	1.17
-7.60	35.7	3.91	48.2	9.20	2.40	104.0	2.96	1.14
-5.80	34.0	3.86	50.0	8.80	2.35	105.8	2.86	1.11
-4.00	32.4	3.82	51.8	8.50	2.30	107.6	2.77	1.09
-2.20	30.9	3.78	53.6	8.20	2.25	109.4	2.68	1.06
-0.40	29.5	3.73	55.4	7.90	2.20	111.2	2.59	1.03
1.40	28.1	3.69	57.2	7.60	2.15	113.0	2.51	1.00
3.20	26.9	3.64	59.0	7.30	2.10	114.8	2.43	0.98
5.00	25.7	3.60	60.8	7.00	2.06	116.6	2.35	0.95
6.80	24.5	3.55	62.6	6.70	2.01	118.4	2.28	0.93
8.60	23.4	3.50	64.4	6.50	1.97	120.2	2.21	0.90
10.4	22.4	3.46	66.2	6.20	1.92			

A sensor reading 0.98 when cold may read 1.67 at room temp. Test VDC with comp running

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Table A

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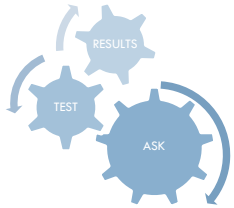
Defrosting Troubleshooting



- **Testing Defrost Circuits –** Always test <u>all</u> compartments, even if only one is bad.
  1. Access main PCB for voltage/resistance testing
  2. With the compressor running, test the defrost sensors (vdc)
  3. Enter Forced Mode Defrost
  4. Measure heater voltage
  5. Remove power and heater connector and check heater circuit resistance
- **Defrost Sensor**
  - After 90 seconds, the sensor voltage shuts off heater, at 50 in Freezer, 63 in Fridge
  - If the sensor is bad it may shut off the defrost circuit in a few minutes, after the initial 90 seconds, causing frost build-up, <u>or it could lock up in defrost and become a total no cool</u>.

- **Note: A defective sensor may check OK at room temperature, test at operating temperature only.**

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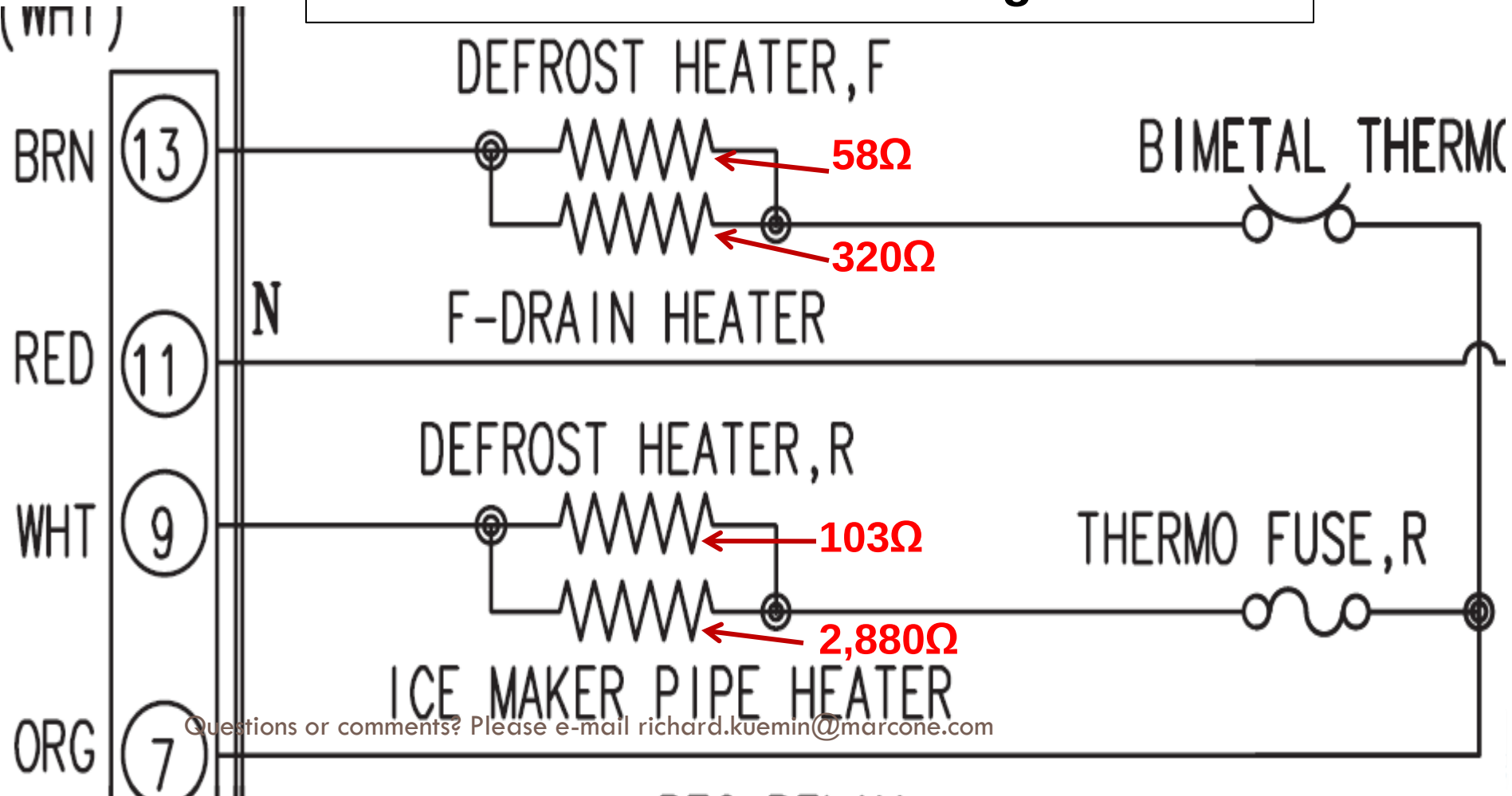
Defrosting Troubleshooting

Heater is part of Evap Coil (RB & older production)

Pins 7-9 = 2,880Ω What's Wrong?

Pins 7-9 = ∞ What's Wrong?



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Sample Heater Resistances

Older RB Models

Component	Resistance	Wattage	Voltage
Freezer Defrost Heater	60Ω	242	120vac
Fridge Defrost Heater	120Ω	120	120vac
Freezer Drain Heater	277Ω	52	120vac
Fridge Drain Heater	379Ω	38	120vac
Fill Tube Heater	1100Ω	10	120vac

New RB Models

Component	Resistance	Wattage	Voltage
Fridge Defrost Heater	120Ω	120	120vac
Freezer Defrost Heater	60Ω	240	120vac
Fill Tube	1108Ω	13	120vac

Older RS Models

Component	Resistance	Wattage	Voltage
Freezer Defrost Heater	58Ω	215	120vac
Fridge Defrost Heater	103Ω	140	120vac
Freezer Drain Heater	320	45	120vac
Dispenser Heater	2880Ω	5	120vac
Water Tank Heater	3600Ω	4	120vac
Fill Tube Heater	2880Ω	5	120vac

Go to Fridge Fast Tracks for each Model

RF & RFG Models

Component	Resistance	Wattage	Voltage
Freezer Defrost Heater	60Ω	240	120vac
Fridge Defrost Heater	120Ω	120	120vac
French Mullion Heater	1800Ω	8	120vac
Ice Duct Heater	3600Ω	4	120vac
Dispenser Heater	9000Ω	1.6	120vac
Water Tank Heater	72Ω	2	12vdc
Fill Tube Heater	72Ω	2	12vdc

RM Models

Component	Resistance	Wattage	Voltage
Freezer Defrost Heater	72Ω	200	120vac
Fridge Defrost Heater	180Ω	80	120vac
CF Defrost Heater	144Ω	100	120vac
CR Defrost Heater	180Ω	80	120vac
F Drain Tube/Heater	2880Ω	5	120vac
R Drain Tube/Heater	2880Ω	5	120vac
Dispenser Heater	2880Ω	5	120vac
Water Tank Heater	29Ω	5	12vdc
Fill Tube Heater	29Ω	5	12vdc

Questions or comments? Please e-mail richard.kuemin@marconi.com

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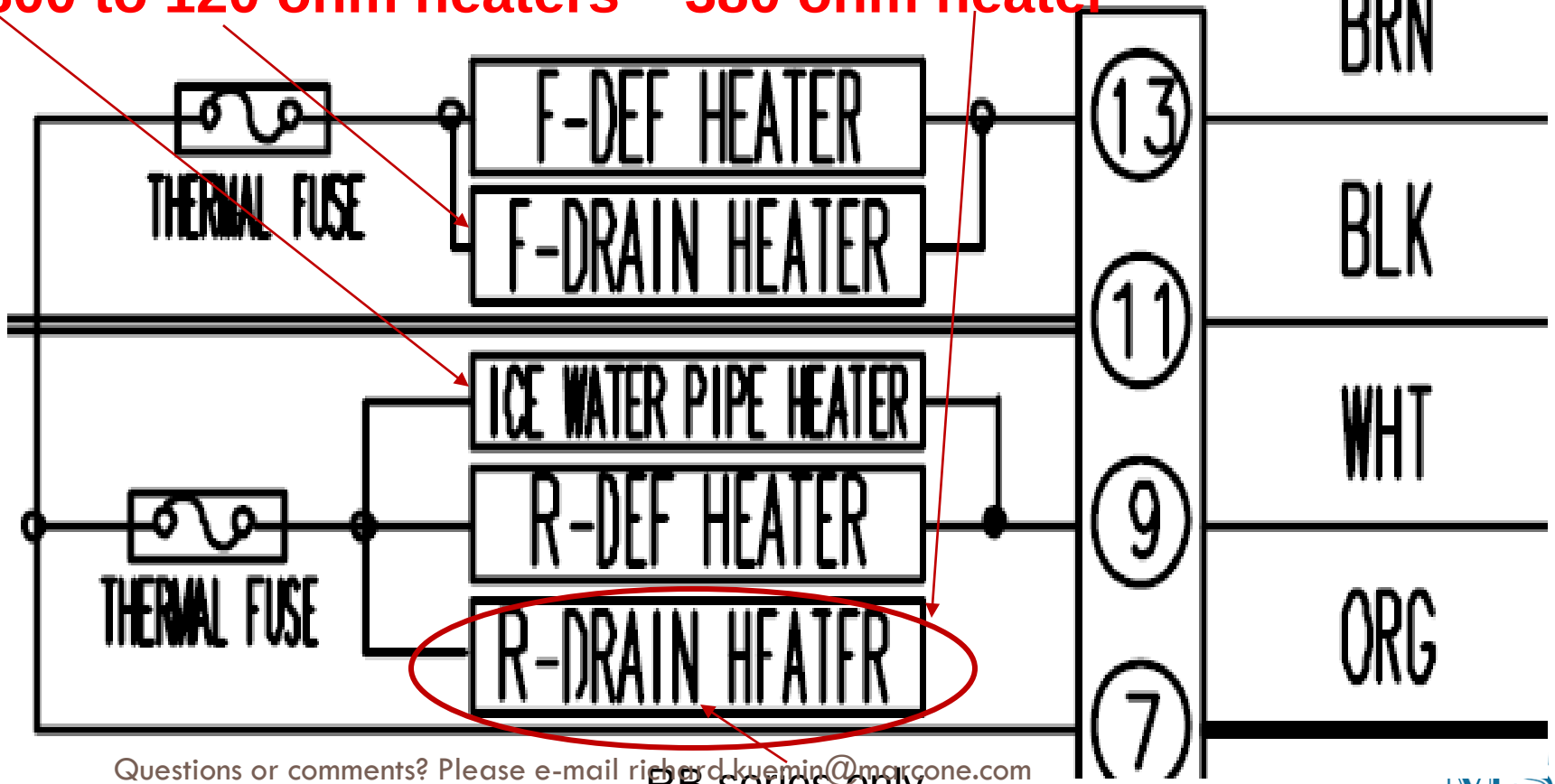
Defrosting Troubleshooting

Heater is part of Evap Coil (RB & older production)

Resistance and use vary by Model (See Fast Track)

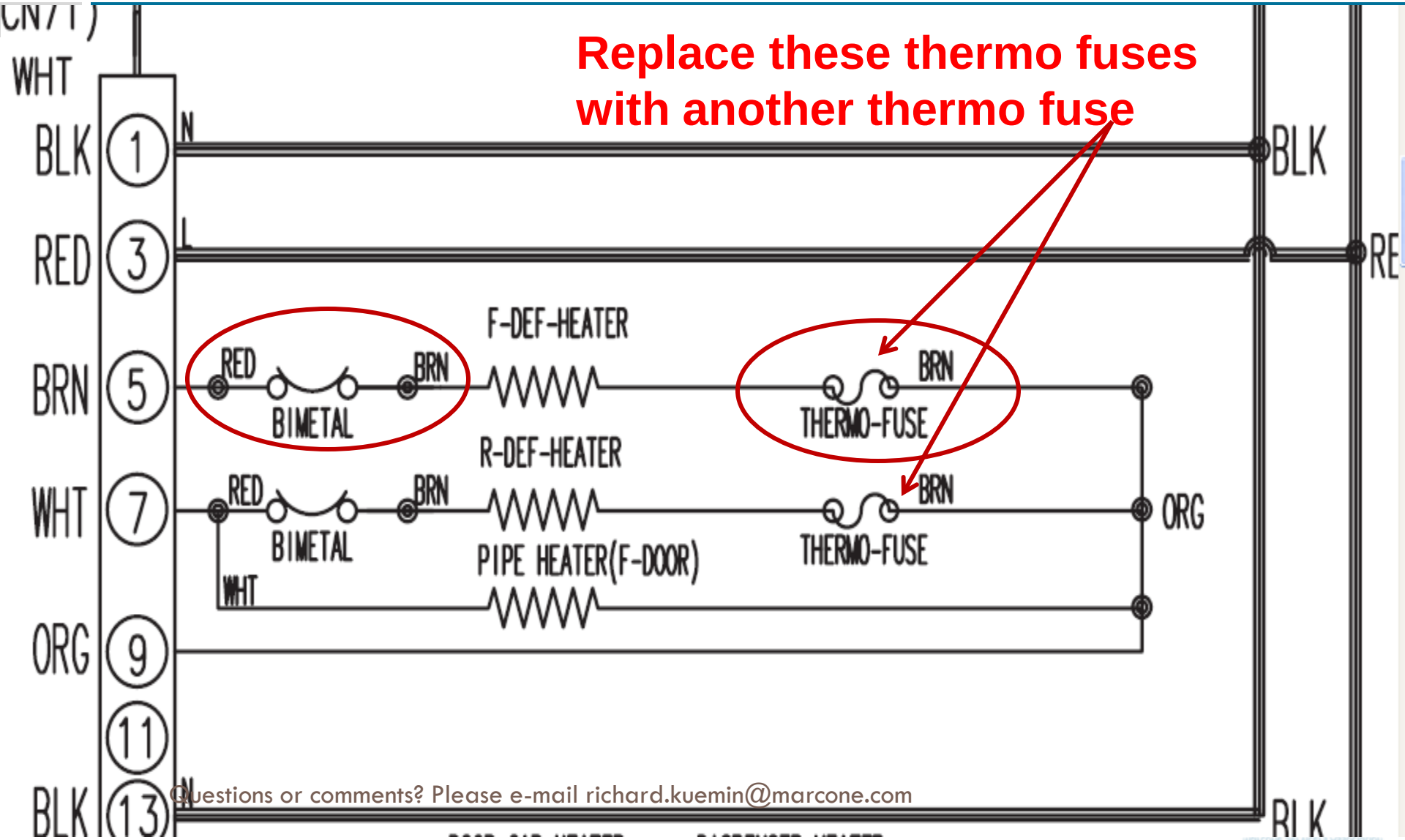
2800 to 120 ohm heaters – 380 ohm heater



RB series only

Questions or comments? Please e-mail richard.kuemin@marcone.com

New Defrost Circuits 2010



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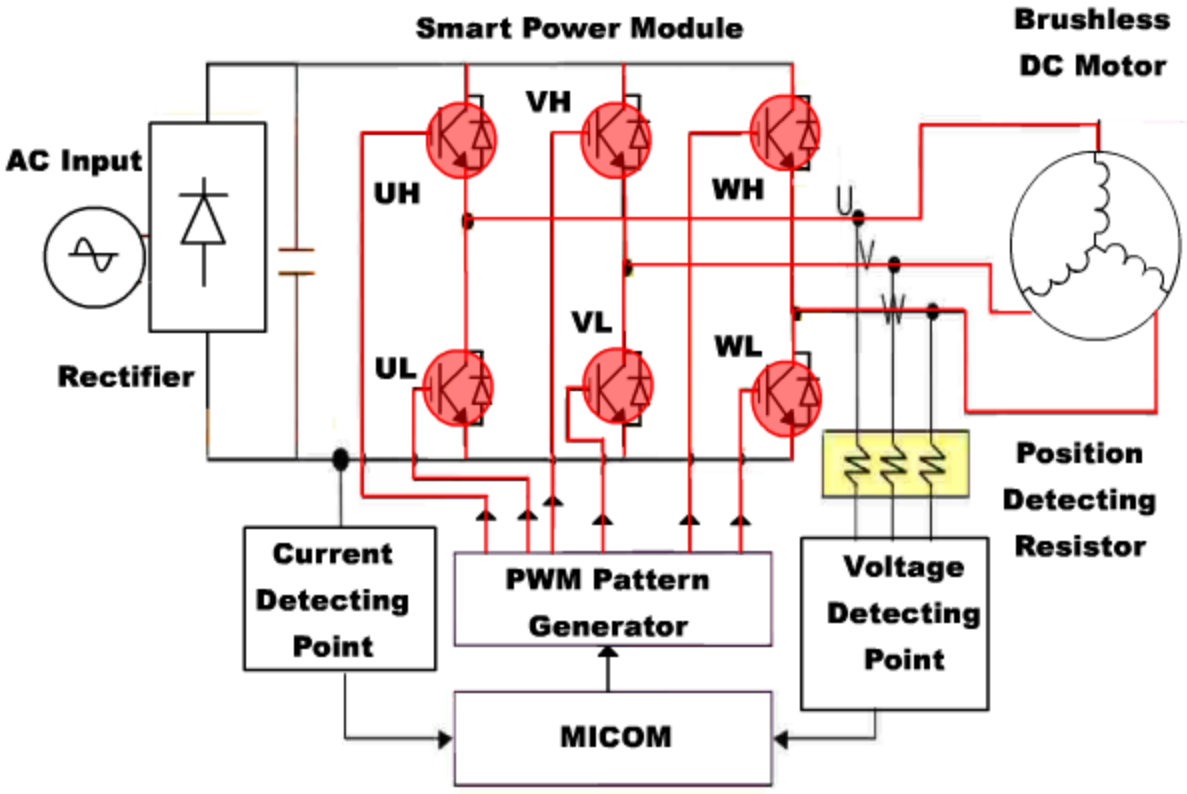
Inverter Compressors on new units



Maximum Cooling Required

All Drive Transistors ON

Compressor spins at ~3500 RPM

Max Cool

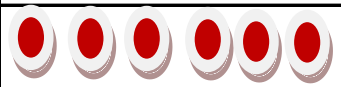
this mode is accessed very rarely

Inverter Compressors

Samsung Refrigerators

All use the same code!!

Please remember, **DO NOT** use this information until you do the following compressor voltage/resistance checks at the Main/Inverter PCBs

Protection Functions	LED Blinking Frequency	Test	Replace
Starting Failure		Check the Inverter PCB & Comp Relay Connectors	Connectors OK,replace Inverter PCB, if same, replace compressor
SPM Fault		If blinking after reset,	Check System for restriction & refrigerant, if OK replace Inverter, if same, replace compressor
Detecting Position Failure		Check Inverter Connectors,	Connectors measure OK, replace compressor, if same, replace Inverter PCB
Motor Locked		Compressor Locking	Compressor
Low Voltage		Compressor Locking, check input voltage	Replace Inverter PCB, if same, replace Compressor
Over Voltage		Compressor Locking, check input voltage	Replace Inverter PCB, if same, replace Compressor

Questions or comments? Please e-mail richard.kuemin@marcone.com

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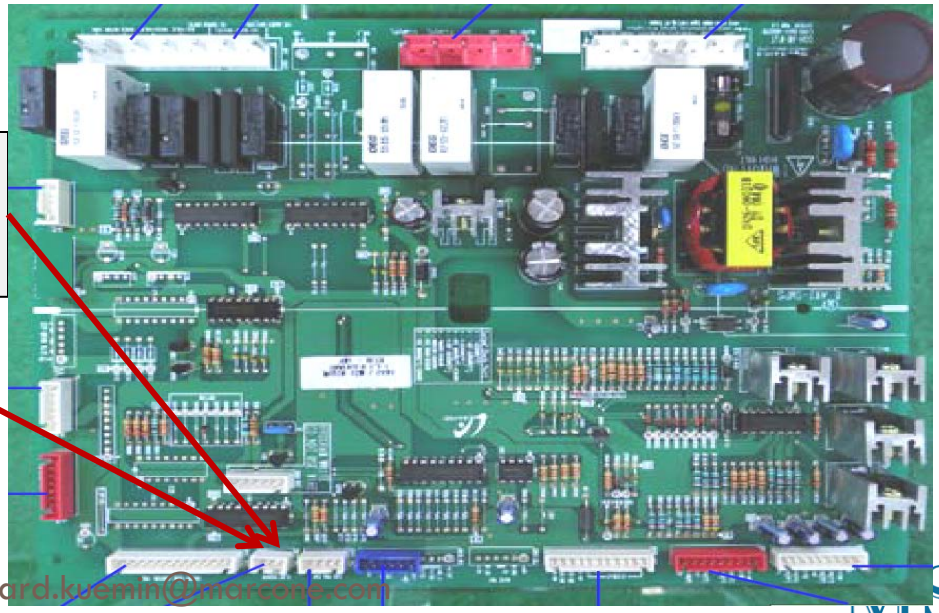
Inverter Compressor & System Operation Testing

TEST BEFORE INTERPRETING LED BLINKING FREQUENCY

Compressor not running, LED is out

1. **Activate Forced Compressor Operation,** wait 3 minutes (in case of high head pressure)
2. If **compressor doesn't start, and LED is out,** check Compressor Control pin for about 2.0-2.7vdc (if not there replace Main PCB)

CN75 To Comp Inverter Board
2- (CN76-1) (Brn-Gry) 5vdc
4- (CN76-1) Comp control (Org-Gry) 2.5vdc



DO NOT touch the meter probe as it will cause voltage error due to body impedance.

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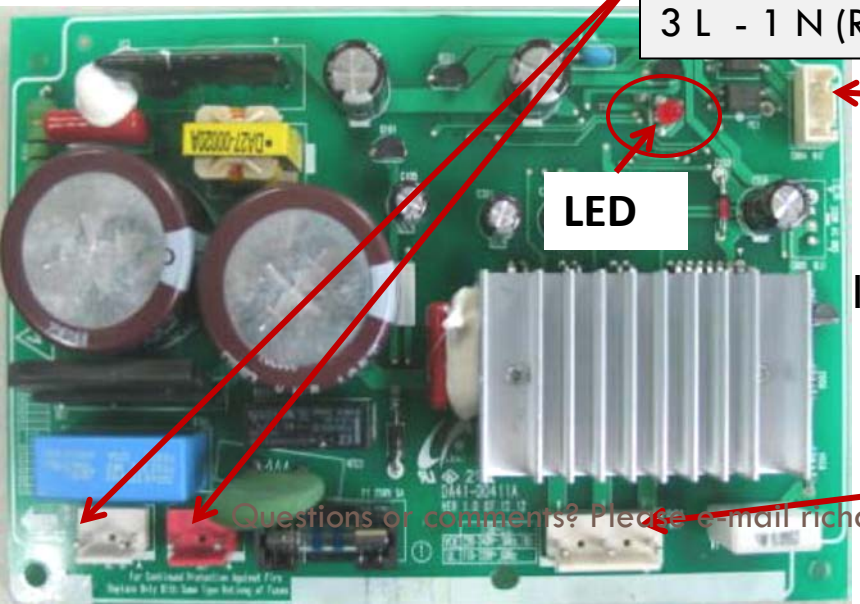
Inverter Compressor & System Operation Testing

TEST BEFORE INTERPRETING LED BLINKING FREQUENCY

1) Compressor not running--LED Blinking
2) Activate Forced Compressor operation, wait 3 min. (in case of high head pressure)
3) Check for 120vac at CN02 Red and Gray wires.
4) If voltage is OK, remove power, disconnect CN03 (Inverter PCB) and check resistance to the windings. Aproxametly10 ohms. If not correct , inspect wire harness, if OK replace compressor.
5) Disconnect CN02 (Inverter PCB), check resistance to Overload , if open replace overload.



CN02 Overload & A/C Line
1 OLP - 3 OLP (Brn- S/Blu)
3 L - 1 N (Red-Gry)

CN04 Compressor Control
2- (CN76-1) 5vdc (Brn-Gry)
4 Comp Signal (Org)

Inverter PCB

CN03 Compressor Windings
1 Compressor (Blue)
3 Compressor (Prp)
5 Compressor (Wht)

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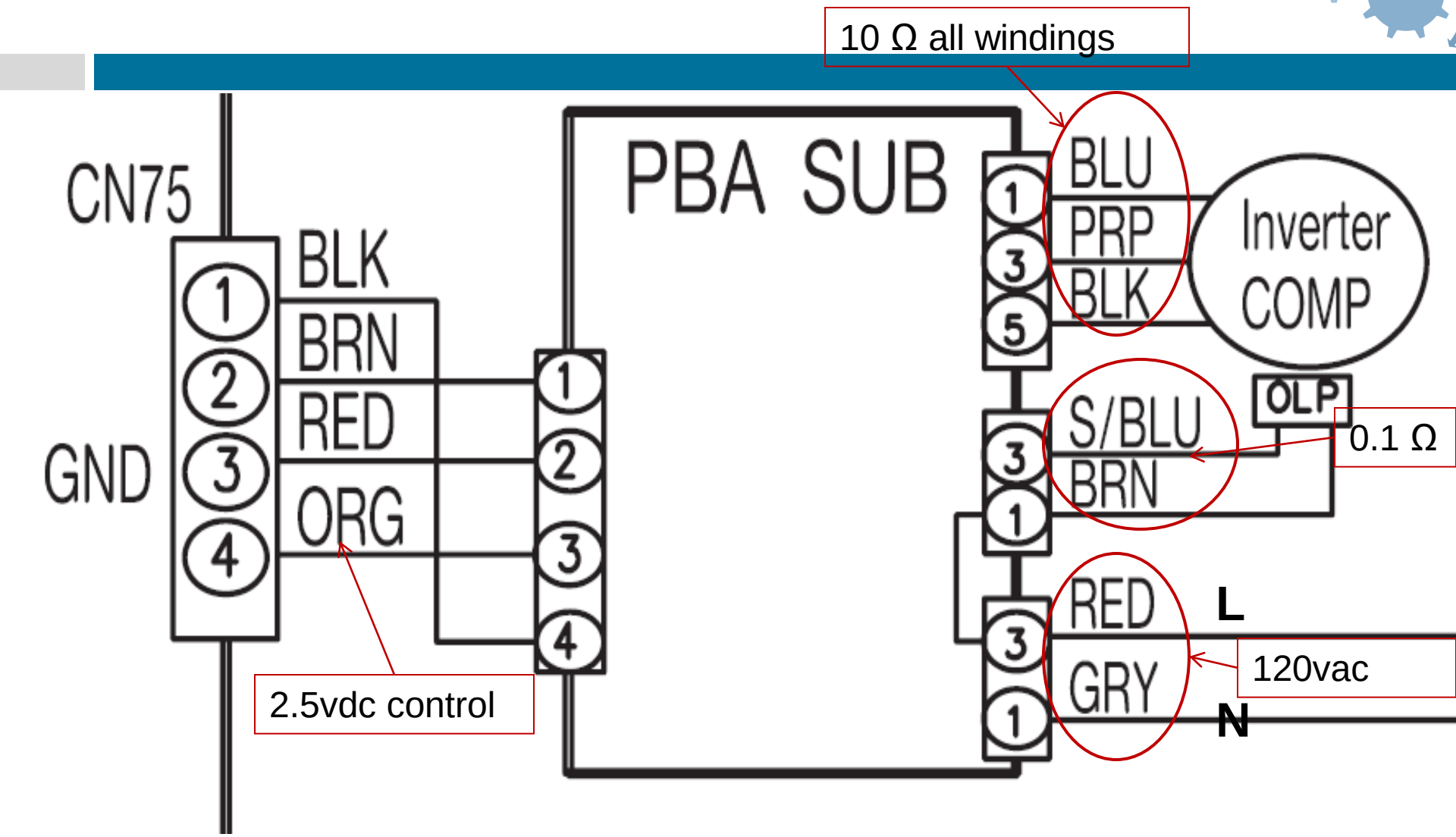
Inverter Compressor Checks



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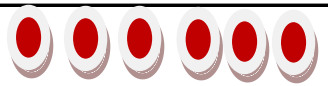
Inverter Compressors

All Samsung Refrigerators use the same code!

Protection Functions	LED Blinking Frequency	Test	Replace
Starting Failure		Check the Inverter PCB & Comp Relay Connectors	Connectors OK,replace Inverter PCB, if same, replace compressor
SPM Fault		If blinking after reset,	Check System for restriction & refrigerant, if OK replace Inverter, if same, replace compressor
Detecting Position Failure		Check Inverter Connectors,	Connectors measure OK, replace compressor, if same, replace Inverter PCB
Motor Locked		Compressor Locking	Compressor
Low Voltage		Compressor Locking, check input voltage	Replace Inverter PCB, if same, replace Compressor
Over Voltage		Compressor Locking, check input voltage	Replace Inverter PCB, if same, replace Compressor

Note: Failure rate for inverter compressors is very very low, also the failure rate for a new PCB is very low.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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SPEEDY DEFROST

TOOLS

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Defrost Troubleshooting

NOTE: Evaporator Covers May Break or Crack if Removed While Frozen To Coil, replace if damaged.

- Ice build up in either the freezer or refrigerator compartment can be caused by a blocked drain. It is possible that the drain is not being defrosted by the heaters enough to properly clear the drain and pass the melted water into the catch pan.
- In the **Freeze**r compartment this may be caused by an **open** defrost foil drain heater
- In the **Fridge** compartment this may be caused by a **bowed** or **damaged** evaporator cover ass'y. Any **cracks** in Styrofoam or **breaks** in the **foil** will cause ice buildup.
- **Check drain tubes next to condenser coil.**

Questions or comments? Please e-mail richard.kuemin@marcone.com

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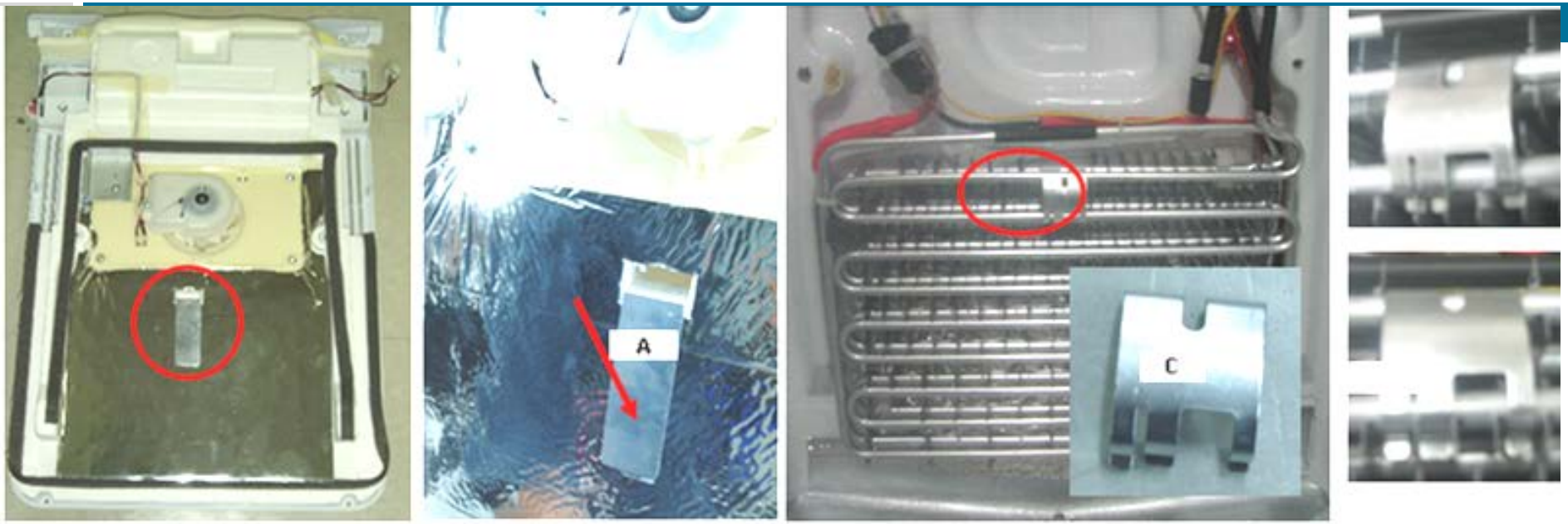
Defrost Troubleshooting



- Metal clips “A” and “C” can be placed on both the evaporator cover and the evaporator. The metal clips will touch and transfer heat more efficiently from the defrost heaters to the drain preventing ice build up. **Due to the low current draw of this heater, the foil is critical for heat transfer.**
- **Part numbers for these parts are as follows:**
- **A: DA61-03502A PLATE-DRAIN INS EVAP, REF**
- **C: DA61-03585A FIXER-EVAP REF**

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Defrost Heater Replacement

Out of Warranty Only

Current RS & RF Production use Sheath Heaters

The Heater Tubing is the front pass on the evaporator ass'y, it can be removed from the new ass'y and reinstalled on the one in the refrigerator compartment, after removal of the defective heater. **This is for the Refrigerator side only**.

Extreme Caution must be used

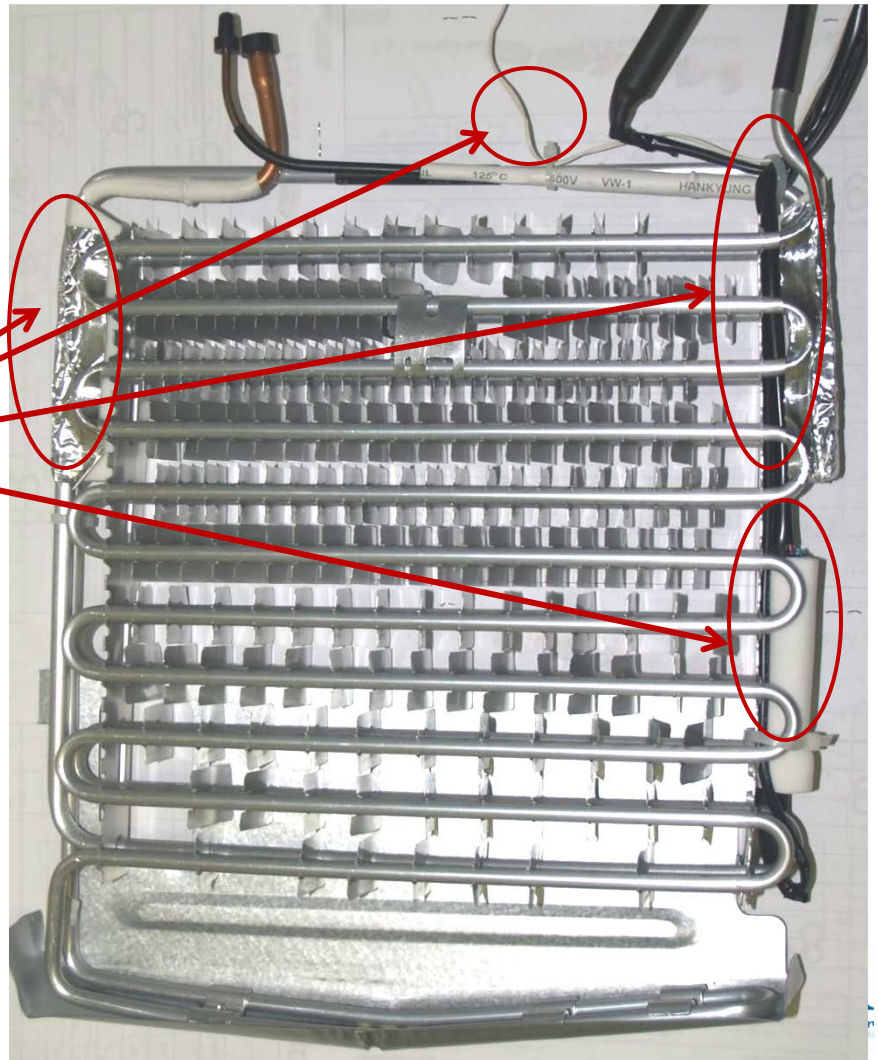
The Evaporator ass'y is very sharp and can cause injury.

Note the position of the foil tape, sensor, thermal fuse, and each zip tie.

The tabs holding the heater tubing must be twisted with care to avoid breakage.

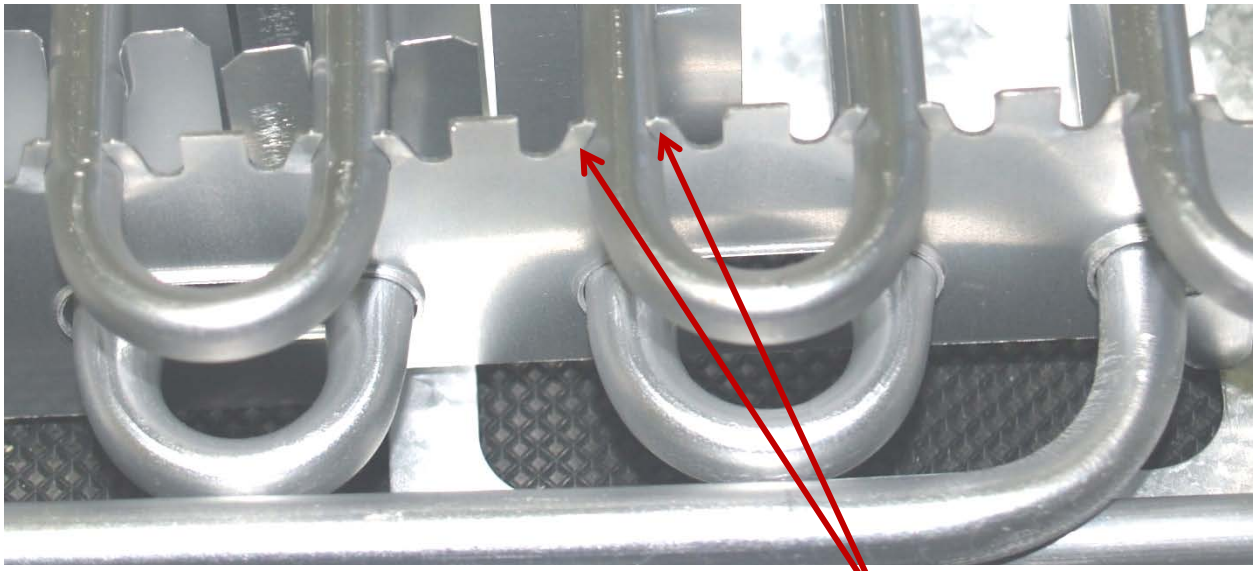
Reinstallation of the heater on the refrigerator evaporator must be done with care to prevent defrost drain freezing issues. Lock each tab properly to assist in heat transfer and position the foil tape, sensor, thermal fuse, and each zip tie exactly as removed. Straighten all fins

Refrigerator Evaporator Ass'y

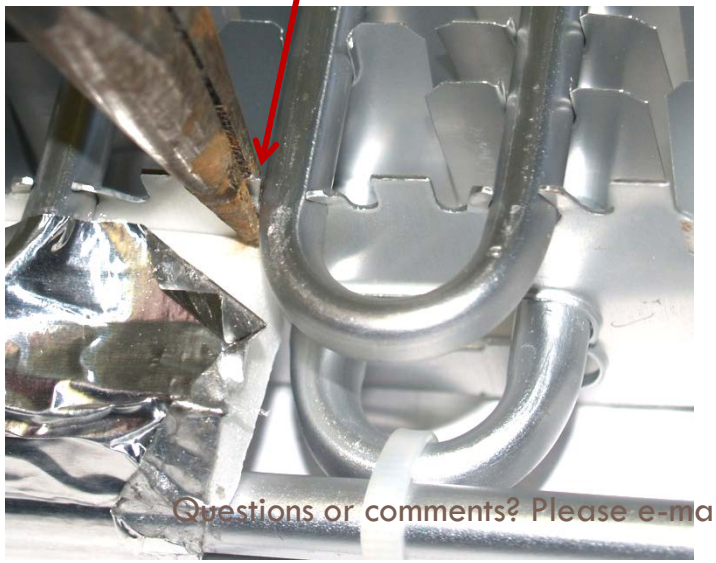


Tools required

Kevlar Gloves
Foil Tape
Zip Ties
Long Nose Pliers
Cutter
Drill
Pop Rivet tool



Heater aluminum tube is locked to the evaporator frame with two tabs on each pass. Twist each tab carefully to avoid breakage and lift up heater tubing.



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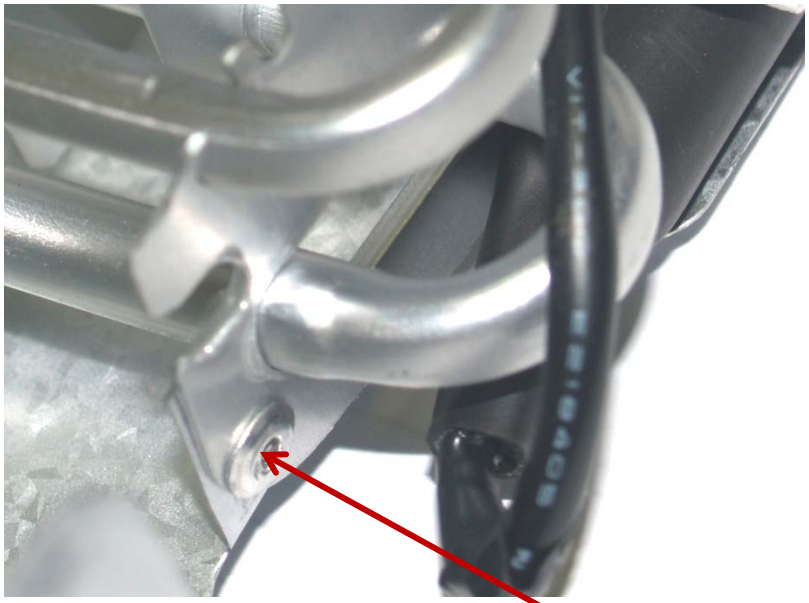
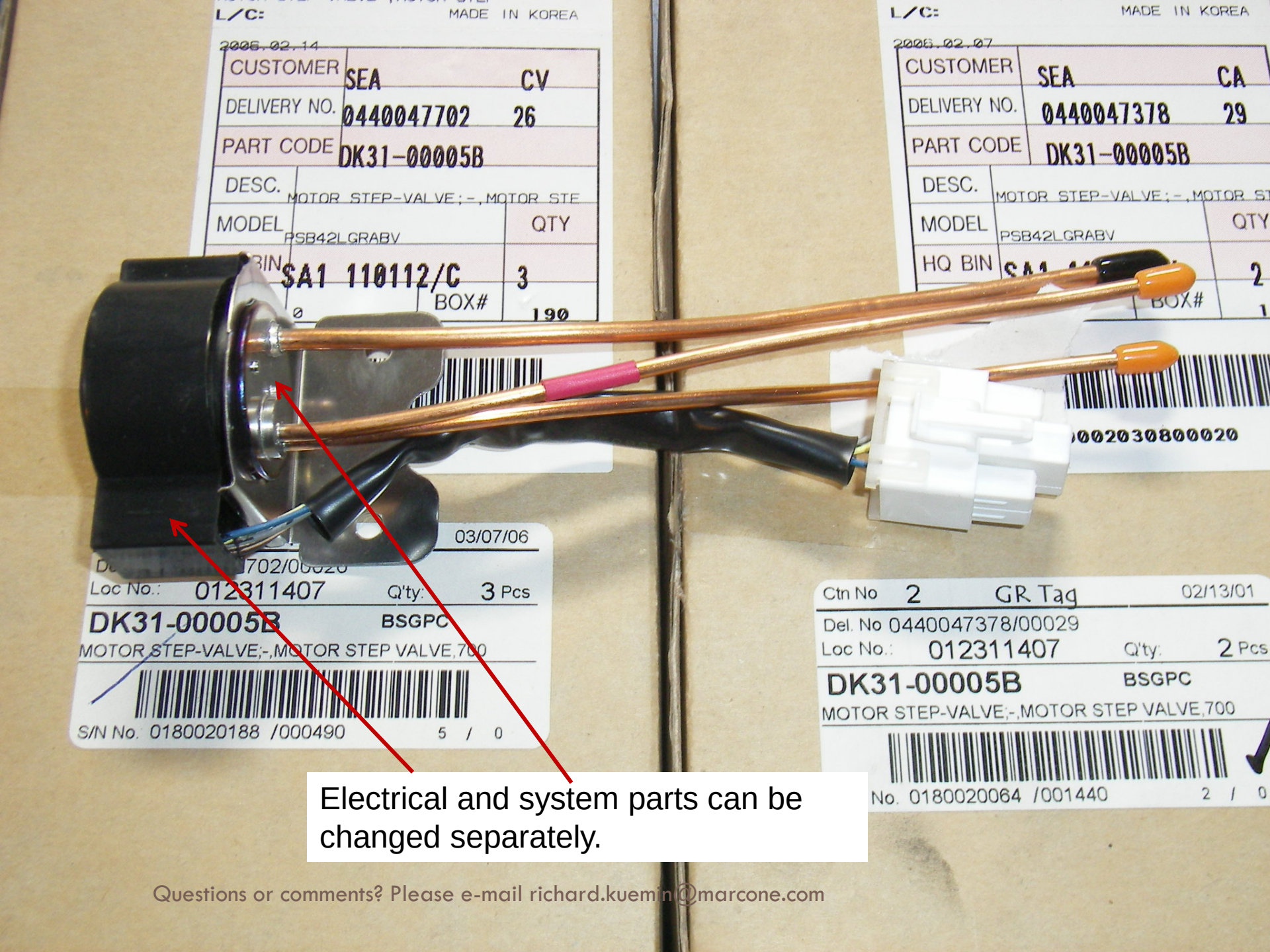


Drain Tray is riveted to the evaporator frame
Drill out rivet to separate heater/tray ass'y from the evaporator coil.
Use Pop Rivet tool to reinstall on evaporator ass'y in the refrigerator.

Heater Ass'y after separation from the evaporator coil



Electrical and system parts can be changed separately.

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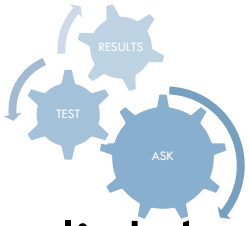
Troubleshoot Diverter Valve



If it fails in the all evap mode, it should work properly using slightly more energy, (possibly cooling fridge a little too much).

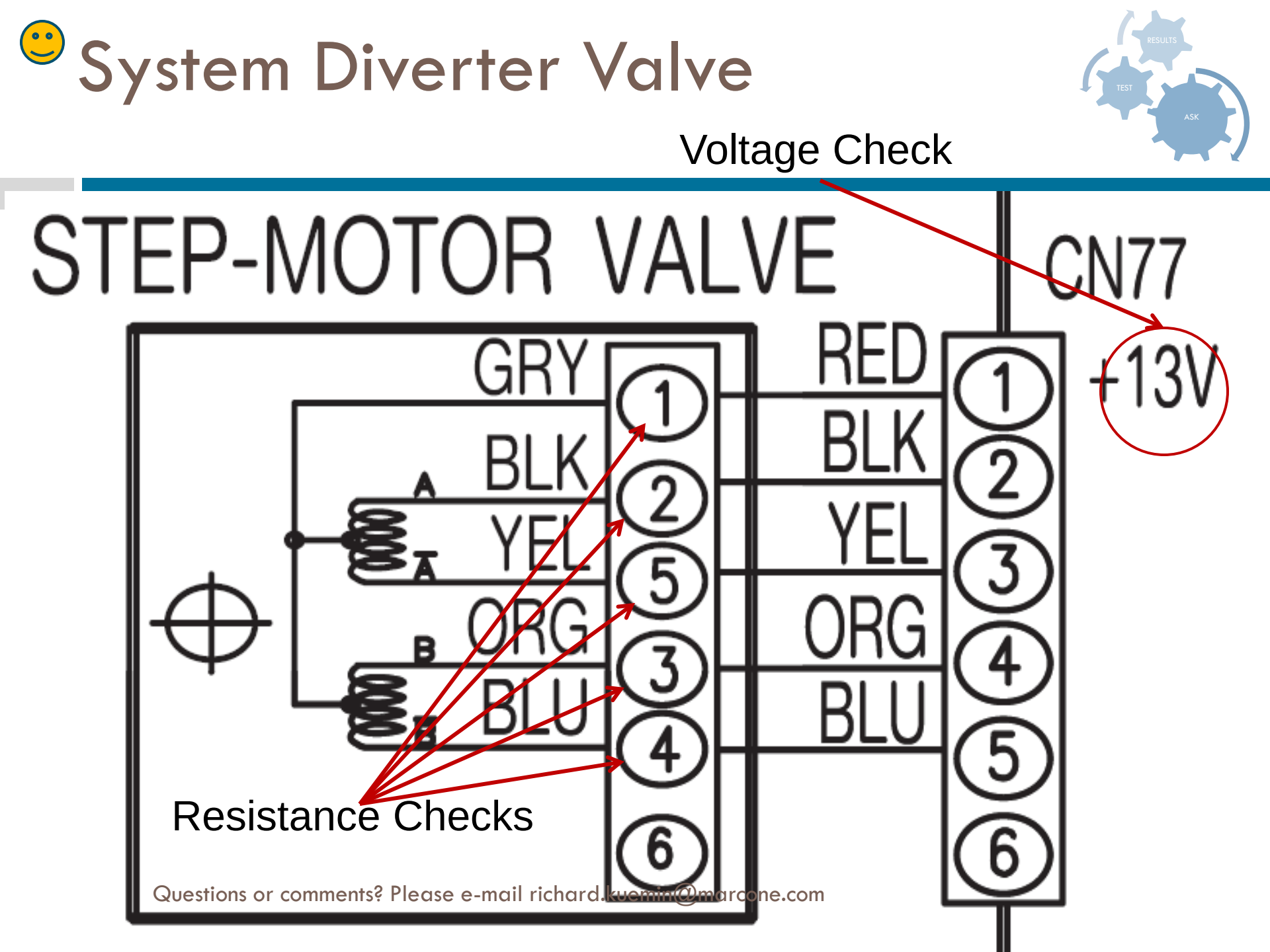
For testing, set fridge temp warmer than the actual temp, monitor the defrost sensor(s) to see if voltage drops/temp rises.

- If it fails in the Freezer evap only mode, there will be a Fridge no cool

Force on the Fridge with the "Pwr Cool" option. Monitor the Fridge evap(s) temp by using the Defrost Sensor(s). If the temp doesn't decrease/voltage increase to proper level, then suspect the Main PCB is not supplying signal to switch the diverter valve.

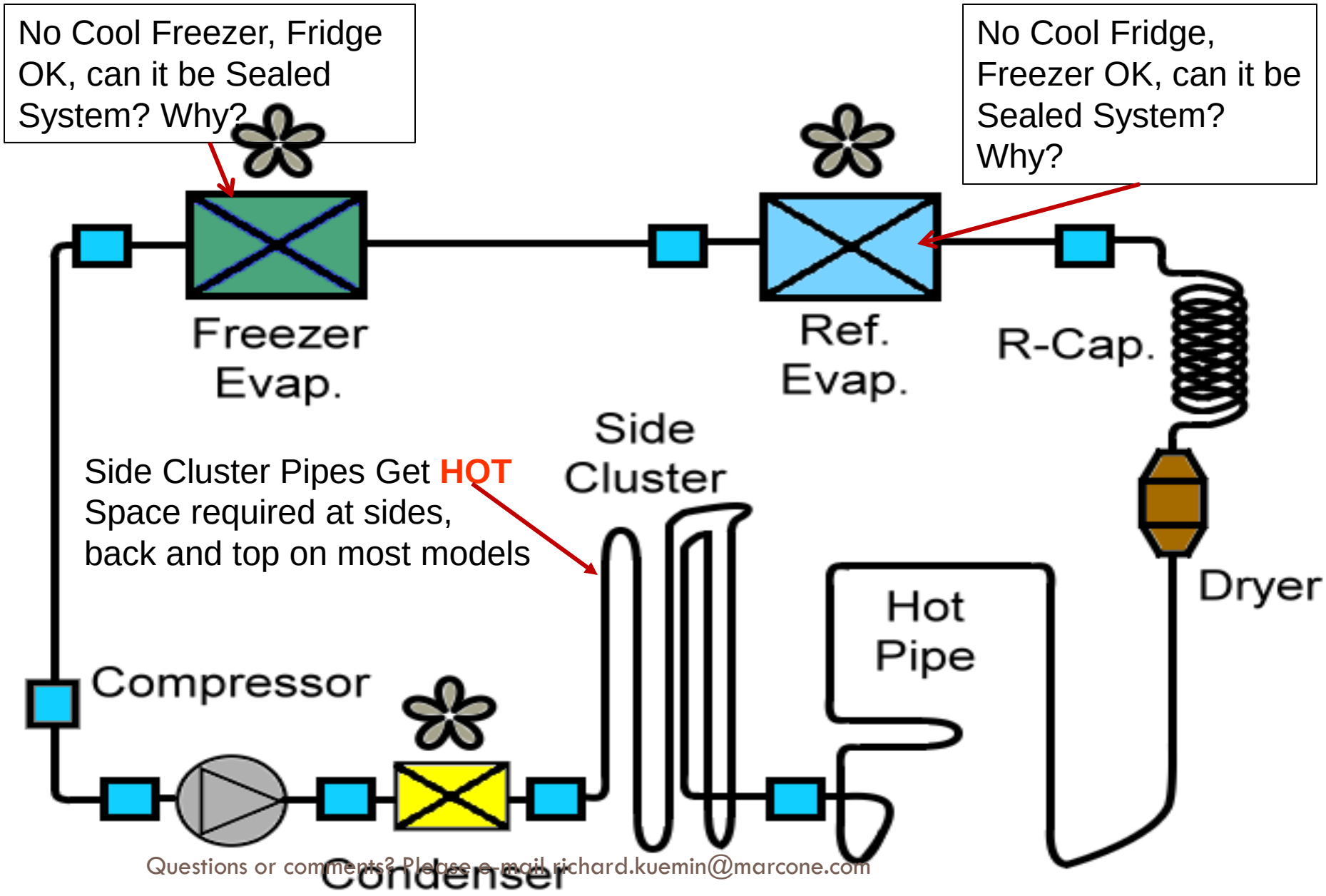
Questions or comments? Please e-mail richard.kuemin@marcone.com

System Diverter Valve



Questions or comments? Please e-mail richard.kuemin@marcone.com

RB, RF and RS units, non Diverter



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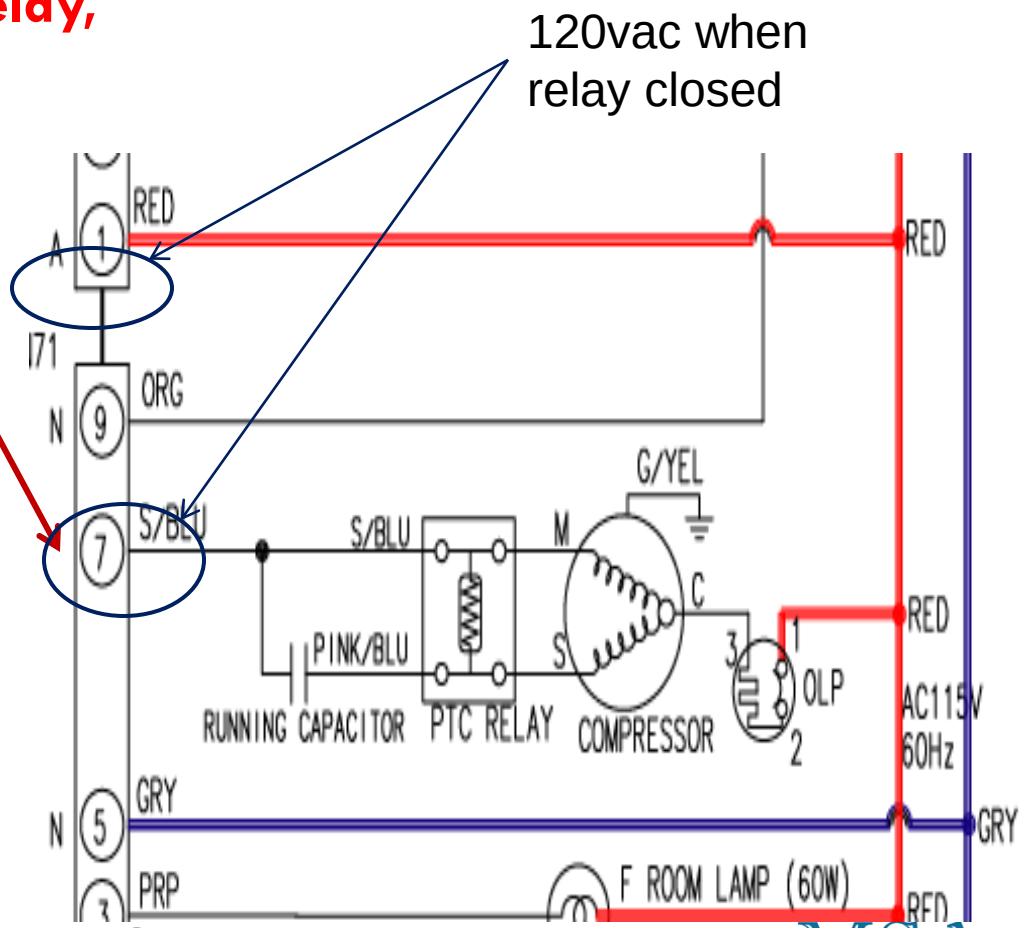
Standard Compressor Operation

- Special Note:
  - **When ordering compressors, they are not shipped with a PTC Relay, Overload Protector, or Drier. REMEMBER TO ORDER!**

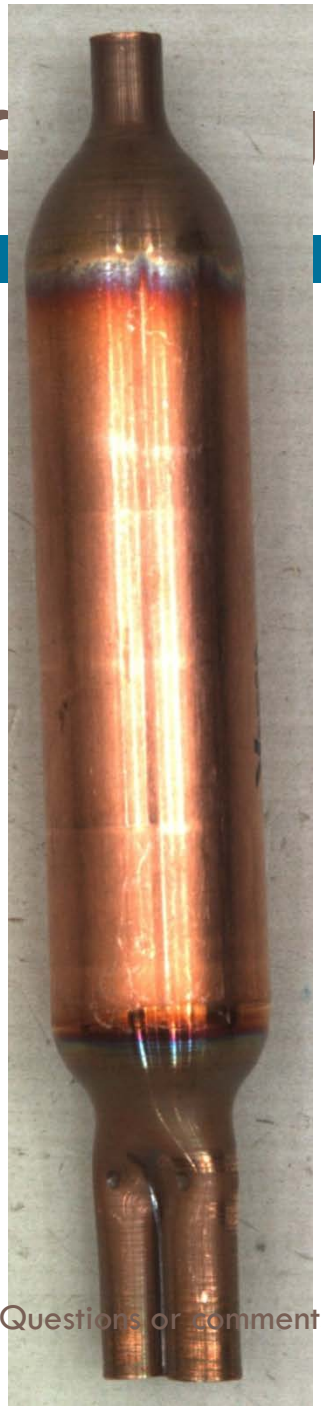
Neutral is switched to power compressor, measuring voltage from chassis ground will show voltage at PTC Relay if compressor is not turned on or PCB is defective.

Use Forced Compressor Mode to test.

Use L1 Common for measurements, tap compressor relay on Main PCB when checking voltage to find intermittent problems.



Sc g Driers



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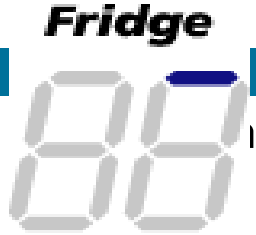
Refrigeration Troubleshooting



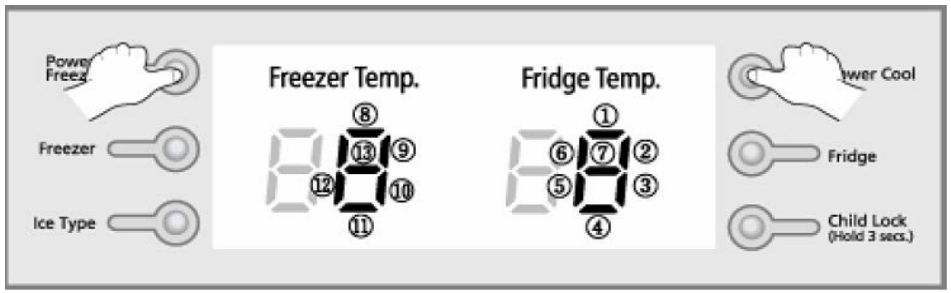
- A Sample fault code would be ii is an example of an Ice Maker Sensor failure.
- **Things that can happen with this fault.**
  - After a power failure the unit would be “dead”, lights work and blinking sensor code, 2006 and older products
  - Display could be “locked-up”, 2007 and newer products
  - The Ice Maker is not making any ice
  - The Ice Maker is dumping partially frozen cubes
- Another sample fault code, if you see this fault, ignore it. This is a modem communication error not applicable in the US, found on units 2006 and older.

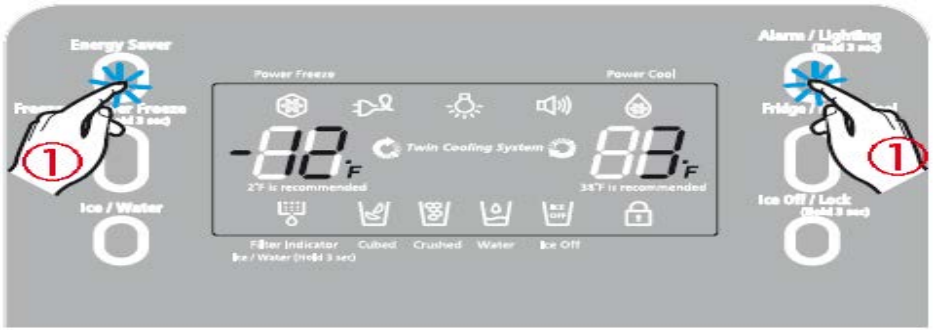
Questions or comments? Please e-mail richard.kuemin@marcone.com

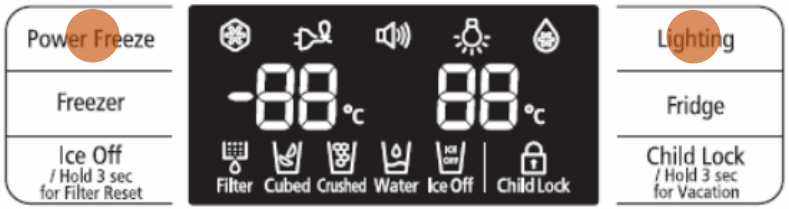
Manual Diagnostic Mode

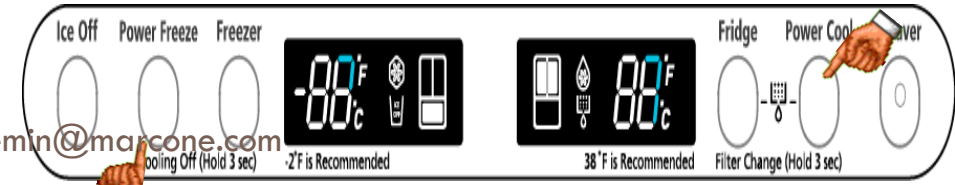
When two buttons are pushed simultaneously there will be no sound, if you hear a sound stop and start over.

Press and hold the two Buttons ***simultaneously*** until display quits blinking and beeps, then release and read fault codes, about 8-10 seconds.









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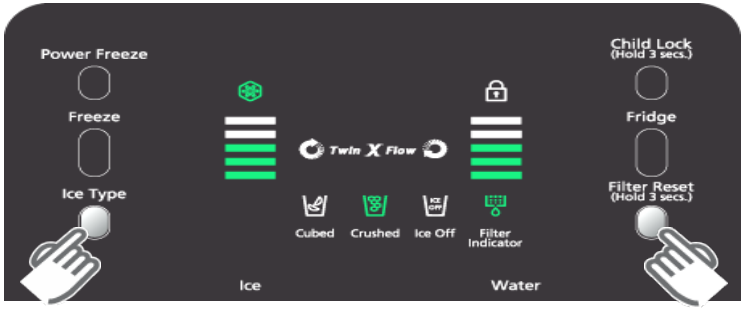
Manual Diagnostic Mode

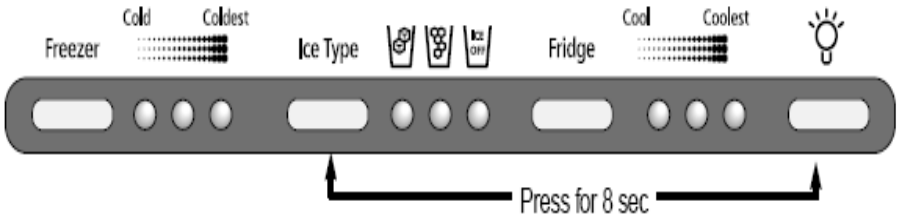
When two buttons are pushed simultaneously there will be no sound, if you hear a sound stop and start over.

Press and hold the two Buttons ***simultaneously*** until display quits blinking and beeps, then release and read fault codes, about 8-10 seconds.

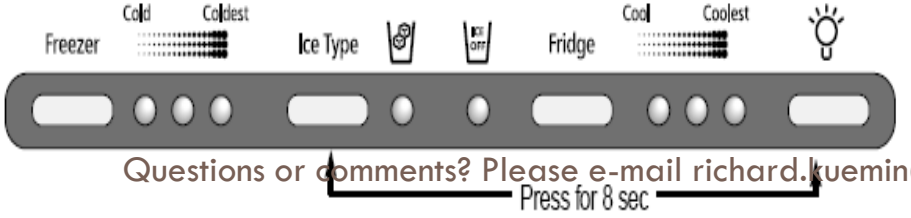
Single Evaporator Models



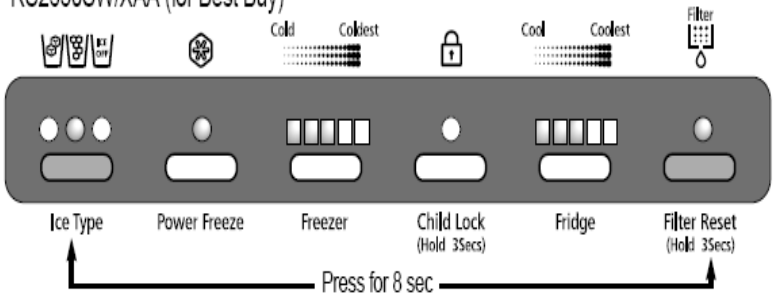
RS2521**/RS2621**



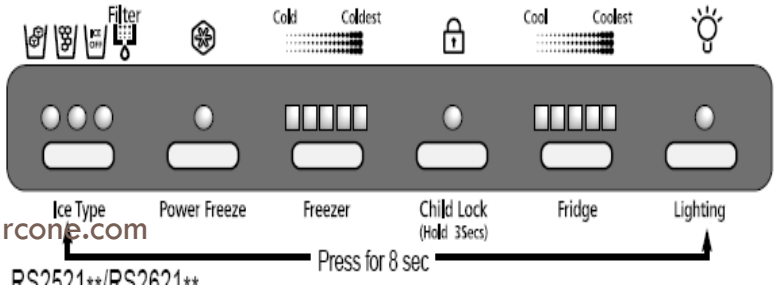
RS2511**/RS2611**



RS2630SW/XAA (for Best Buy)



RS2531**/RS2631**



RS2521**/RS2621**

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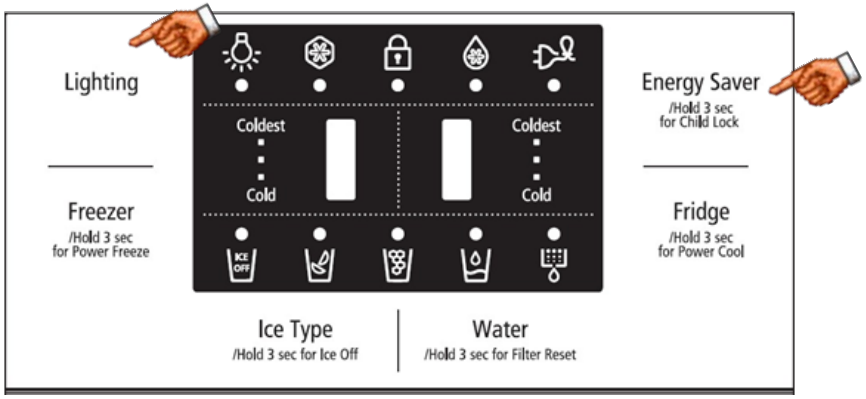
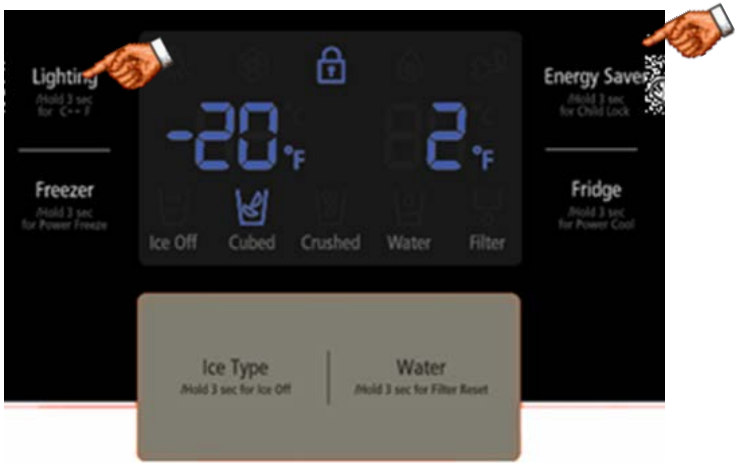
Manual Diagnostic Mode
2010 Models

RS261MD, RS263TD



RS265TD, RS267TD



RF4287HA

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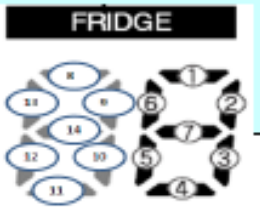
Fault Codes

Faults possible when working on a unit. WHY?

Samsung 'Refrigerator' Diagnostic Code Quick Guide

No	Error Items	LED	TROUBLE
			
1	I/M-SENSOR		Ice Maker Sensor Error- This can be an Electric wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 122° or < -58 ° F.
2	R-SENSOR		Refrigerator Compartment Sensor Error- This can be an Electric wire cut, short-circuit, contact failure, or missing sensor. Cause is also a temperature reading > 122°or < -58 ° F.
3	DEFROST SENSOR OF R ROOM		Ref. Defrost Sensor Error- This can be an Electric wire cut, short-circuit, contact failure, or missing sensor. Cause is also a temperature reading > 122°or < -58 ° F.
4	R-FAN ERROR		This error indicates the Refrigerator Evap Fan is not spinning at the correct RPM or the fan feedback line is open.
5	I/M FUNCTION ERROR		This error indicates the Ice tray has not returned to level after an ice harvest. The error is displayed after three failed attempts.
6	COOL SELECT ZONE SENSOR		Cool Select Zone Sensor Error- This can be an Electric wire cut, short-circuit, contact failure, or missing sensor. Cause is also a temperature reading > 122°or < -58 ° F.
7	R-DEFROSTING ERROR		Refrigerator Room defrost heater- wire cut, short-circuit, contact failure, missing sensor housing, or defective temperature fuse/bi-metal. Defrost on for over 80 minutes

Questions or comments? Please e-mail richard.ruemin@marcone.com

Master fault code sheet
Duplications are always RM 4-door units

Fault Codes

Samsung 'Refrigerator' Diagnostic Code Quick Guide

No	Error Items	LED	TROUBLE
8	PANTRY-DAMPER-HEATER ERROR	Fridge	Sensor system in Pantry Room errors
9	CR-SENSOR 4-Door	Fridge	CR Compartment Sensor Error- This can be an Electric wire cut, short-circuit, contact failure, or missing sensor. Cause is also a temperature reading > 122°or < -58 ° F.
9	PANTRY-SENSOR ERROR	Fridge	CR Compartment Sensor Error- This can be an Electric wire cut, short-circuit, contact failure, or missing sensor. Cause is also a temperature reading > 122°or < -58 ° F.
10	DEFROST SENSOR OF CR ROOM 4-Door	Fridge	CR Compartment Defrost Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 122° or < -58 ° F.
11	DEFROST SENSOR OF CF ROOM 4-Door	Fridge	CF Compartment Defrost Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 122° or < -58 ° F.
12	CR-DEFROSTING ERROR 4-Door	Fridge	CR Compartment Defrosting heater- wire cut, short-circuit, contact failure, missing sensor housing, or defective temperature fuse/bi-metal. Defrost on for over 80 minutes
13	CF-DEFROSTING ERROR 4-Door	Fridge	CF Compartment defrosting heater- wire cut, short-circuit, contact failure, missing sensor housing, or defective temperature fuse/bi-metal. Defrost on for over 80 minutes
14	WATER HEATER ERROR	Fridge	Error is displayed when the water reservoir tank heater is open or shorted

Questions or comments? Please e-mail richard.kuemin@marcone.com

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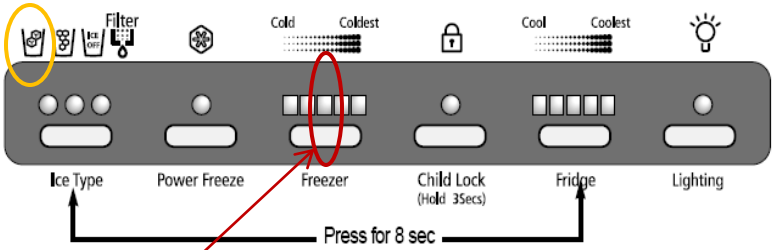
Fault Codes



Samsung 'Refrigerator' Diagnostic Code Quick Guide			
Samsung Single Evaporator 'Refrigerator' Diagnostic Code Quick Guide			
No	**Error Items**	**Display LED**	**TROUBLE**
1	Fridge Sensor	Fridge "Mid"	Fridge Room Sensor Error- This can be an wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 149° or < -58 ° F.
2	Peripheral Temp Sensor	Fridge "Min"	Ambient Temp. Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 149° or < -58 ° F.
3	Freezer Sensor	Freezer "Max"	Freezer Room Sensor Error- This can be an wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 149° or < -58 ° F.
4	Freezer Defrost Sensor	Freezer "Mid"	Freezer Room Defrost Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 149° or < -58 ° F.
5	Freezer Defrost Error	Freezer "Min"	Freezer Room defrosting heater- wire cut, short-circuit, contact failure, missing sensor housing, or defective temperature fuse/bi-metal. Defrost on for over 90 minutes
6	I/M Function Error	No Ice	This error indicates the Ice tray has not returned to level after an ice harvest. The error is displayed after three failed attempts.
7	I/M Sensor Error	Cubed Ice	Ice Maker Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 149° or < -58 ° F.

Questions or comments? Please e-mail richard.kuemin@marcone.com

Fault Codes

Samsung Older "RB" Series 'Refrigerator' Diagnostic Code Quick Guide			
No	Error Items	Display LED	TROUBLE
1	R-SENSOR	Fridge 5	Fridge Compartment Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 150° or < -58 ° F.
2	DEFROST SENSOR, R ROOM	Fridge d	Fridge Compartment defrosting heater- wire cut, short-circuit, contact failure, missing sensor housing, or defective temperature fuse/bi-metal. This can also be caused by a temperature reading > 150° or < -58 ° F.
3	Peripheral Temp Sensor	Freezer E5	Ambient Temp. Sensor Error- This can be an wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 150° or < -58 ° F.
4	F-SENSOR	Freezer F5	Freezer Compartment Sensor Error- This can be a wire cut, short-circuit, contact failure, or missing sensor. This can also be caused by a temperature reading > 150° or < -58 ° F.
5	F-DEF-SENSOR	Freezer d5	Freezer Compartment defrosting heater- wire cut, short-circuit, contact failure, missing sensor housing, or defective temperature fuse/bi-metal. This can also be caused by a temperature reading > 150° or < -58 ° F.

2010 Fault Codes

*** Self-diagnosis CHECK LIST**

Display		Trouble item	Trouble contents
F	R		
		FZ-Sensor Error	Senser system in FZ compartment errors
		FF-Sensor Error	Sensor system in FF compartment errors
		FZ-DEF-Sensor Error	Defrost Sensor system in FZ compartment errors
		FF-DEF-Sensor Error	Defrost Sensor system in FF compartment errors
		Ambient-Sensor Error	Snesor external system errors
		Flex room Error	Sensor system in Pantry Room compartment errors
		I/M-Sensor Error(R)	Sensor system in ICE maker(R) errors
		HUMIDITY-Sensor Error	Sensor system in Humidity Sensor error
		I/M-Sensor Error(FF)	Sensor system in Ice maker(FF) errors
		ICE ROOM-SENSOR ERROR	Sensor system in Ice Room errors
		FZ-FAN Error	Fan motor system in FZ compartment errors

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2010 Fault Codes

* Self-diagnosis CHECK LIST

Display F	Display R	Trouble item	Trouble contents
22		FZ-DEF-HEATER ERROR	DEFROST SYSTEM IN FZ COMPARTMENT ERRORS
23		FF-DEF-HEATER ERROR	DEFROST SYSTEM IN FF COMPARTMENT ERRORS
24		ICE/MAKER FUNCTION ERROR	ICE MAKER IN FZ FUNCTION ERRORS
25		FLEX ZONE DAMPER HEATER ERROR	DAMPER HEATER OPEN/ BAD WIRE
26		ICE/MAKER FUNCTION ERROR(FZ)	ICE MAKER IN FZ FUNCTION ERRORS
29	8E	FLEX ZONE DAMPER HEATER ERROR	DAMPER HEATER OPEN/ BAD WIRE
33		ICE PIPE HEATER ERROR(FZ)	ICE PIPE HEATER IN FZ COMPARTMENT ERRORS
39		ICE MAKER FUNCTION ERROR(FF)	SENSOR SYSTEM IN HUMIDITY SENSOR ERRORS
40		ICE ROOM-FAN ERROR	FAN MOTOR SYSTEM IN ICE ROOM ERRORS
41		PANEL ↔ MAIN MICOM COMMUNICATION ERROR	PANEL ‹ › MAIN MICOM COMMUNICATION ERRORS
61		ICE DUCT-HEATER ERROR(FF)	HEATER SYSTEM IN ICE DUCT(FF) ERRORS

Questions or comments? Please e-mail richard.kuemin@marcone.com

2010 Fault Codes

Duplication

RS261MD** - RS263TD**/XAA Samsung 'Refrigerator' Diagnostic Code Quick Guide			
No	Error Items	Display LED	TROUBLE
1	ICE MAKER SENSOR	Right-① LED ON	Ice Maker sensor connector loose; contact failure, electric wire cut, short-circuit; Ice Maker sensor failure
2	R-DEF SENSOR	Right- ③ LED ON	Refrigerator evaporator defrosting sensor connector loose; contact failed, electric wire cut, short circuit; sensor itself failure
3	REFRIGERATOR SENSOR	Right-④ LED ON	Refrigerator sensor connector loose; contact failure, electric wire cut, short-circuit; Refrigerator sensor itself failure
4	R-FAN ERROR RS263TD	Right-⑤ LED ON	R-Fan motor operation failure; feedback signal line contact failure, motor's electric wire loose
4	DAMPER HTR ERROR RS261MD	Right-⑤ LED ON	Damper Heater is sensed as open error due to Connector Slipped-Out or Open-Contact, Wire Cut
5	R-DEF ERROR	Right ⑥ LED ON	Connector Slipped-Out or OpenContact, Wire Cut or Short Circuited, Defective Thermistor, or Defrost time over 80 minutes.
6	I/M FUNCTION ERROR	Right-⑦ LED ON	Ice-ejector and level failed three times or more
7	EXIT-SENSOR	Left- ① LED ON	Air sensor connector loose; contact failure, electric wire cut, short-circuit; open air sensor itself failure
8	FREEZER SENSOR	Left- ② LED ON	Freezer sensor connector loose; contact failed, electric wire cut, short-circuit; Freezer Room sensor itself failure.

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RFG299***

Function for failure diagnosis

Function for operational diagnosis

For details download complete Service Manual

Functions	How to operate		Use this functions...
	Keys	Time	
Forced Operation	"Lighting" + "Ice Off"	8 sec	To set the forced operation and forced defrost.
Cooling Off	"Slide Show" + "Lighting"		To set Display Mode at the shop
Touch screen Calibrations	"Lighting" + "Home"		To calibrate the stylus pen touch point of LCD Touch Screen
Self-Diagnostics	"Slide Show" + "Home"		To check the failure modes
Load Operation Check			To check the present operating load of regrigerator.
Set Point Shift Mode			To change the setting options about the regrigerator operating status. Need careful decision for the option change.
Error History			To check the latest 5 errors.
Check LCD Pixel			To check the LCD Pixel failures.
S/W Upgrade			To upgrade the Software on the Panel.
User Data Back up/Restoration			To back up & restoration the user's data when update software and/or replace PBA panel.
OS Upgrade	Reset as pressing the "Ice Off" button	Reset	To update OS on the Panel

Questions or comments? Please e-mail richard.kuemin@marcone.com

Sensors Control Everything

The Sensors provide accurate control of the temperatures at various locations in the refrigerator. (up to 11).

Samsung Refrigerators always do a Self Diagnostic on power up, Open/Short Sensor will lock the unit!

- **Compartment** (Room) Temperature Sensor 2 or 4
- **Cool Zone Drawer/Cool select Pantry**
- **Ice Production I/M Sensor**
- **Ice Room Sensor**
- **Humidity Sensor**

- **Ambient Sensor –** Condenser Fan control, under hinge cover
- **Defrost Sensors** on each evaporator in Samsung Refrigerators

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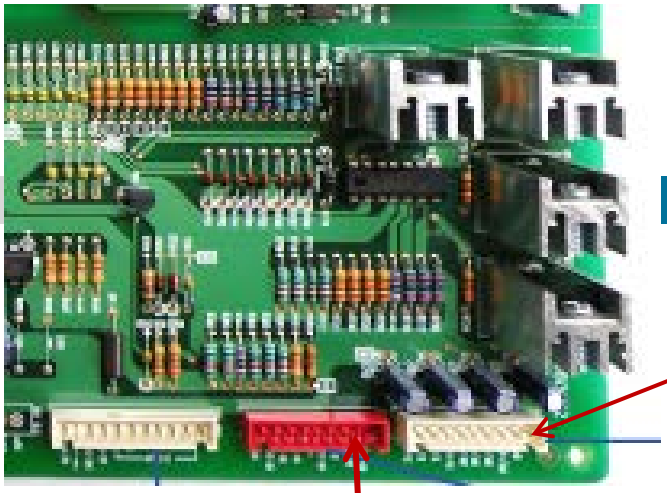
How to Read PCBs



CN76 F, R, C Fans
2-1 Ice Room Fan (Blk-Gry)7-11vdc
3-1 F Fan (Yel-Gry) **7-11vdc**
4-1 R Fan (Org-Gry) **7-11vdc**
5-1 C Fan (S/Blu-Gry) **7-11vdc**
6 Ice Room Fan FG(Pnk)
7 F Fan FG(Brn)
8 R Fan FG(Red)
9 C Fan FG(Blu)

Connectors for measuring voltages

Component to be measured

Nominal voltage reading to be expected

CN30 Sensors & Switches
4-(CN76-1) F Def Sensor (Org-Gry) 2.3~4.2vdc

Pin (Connector) numbers for meter leads to measure voltage

Wire colors for meter leads test points

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CN76 F, R, C Fans & Door Sws
2-1 Ice Room Fan (Blk-Gry)**7-11vdc**
3-1 F Fan (Yel-Gry) **7-11vdc**
4-1 R Fan (Org-Gry) **7-11vdc**
5-1 C Fan (S/Blu-Gry) **7-11vdc**
6 Ice Room Fan FG(Pnk)
7 F Fan FG(Brn)
8 R Fan FG(Red)
9 C Fan FG(Blu)
11– Fz Door Sw
12– FF Door Sw
13– Mid Drawer door Sw

CN77 Stepper Motor
1-2 Damper Heater (Blk-Brn) **12vdc**
7-(CN76-1) Diverter Valve (Org-Gry) **12vdc**

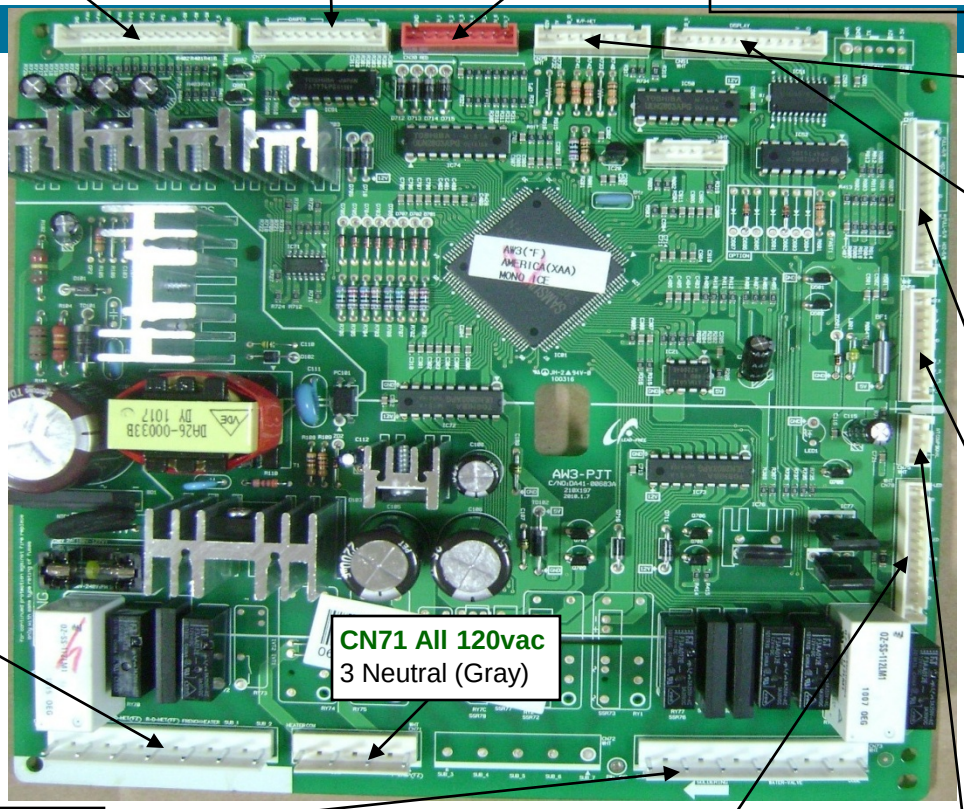
CN30 Sensors & Switches
2-1 +**5vdc** (Blk-Gry)
3 Humidity Sensor (Brn)
4-(CN76-1)Fz Sensor (Red-Gry) **3.5~4.2vdc**
5-(CN76-1)F Def Sensor (Org-Gry) **2.3~4.2vdc**
6-(CN76-1) R Sensor (Wht-Gry) **2.4~2.8vdc**
8-(CN76-1) R Def Sensor (S/Blu-Gry) **2~4.2vdc**
9-(CN76-1) Mid Drawer Sensor (W/Blk-Gry) **2.6~2.8vdc**

CN79 Flow Sensor
7-Flow Sensor Out (Wht)
9-8 **+5vdc** (Red-Blk)

CN51 Mid Drawer Display

CN90 Ice Maker
1-7 Sensor I/M eject (Brn-Gry)
2-7 Test Sw (Blk-Gry) **5vdc**
3 Full Hall IC out (Blu)
4 Horiz Hall IC out (S/Blu)
5-7 **+5vdc** (Yel-Gry)

CN70 All 120vac
3-13 I/M Heater (Blk-Gry)
5-13 French & Disp Heater (Yel-Gry)
7-13 R Defrost (Wht-Org)
9-13 F Defrost/Ice Duct heater (Brn-Gry)
11- L1 (Red)
13- N (Gry)



CN71 All 120vac
3 Neutral (Gray)

CN50 Display
3-5 (Org-Yel) **13vdc**
4-5 (Yel-Yel) **5vdc**
7-5 Ice Sw (Blu-Yel) **5vdc**
8-5 Water Sw (Pnk-Yel) **5vdc**
9-5 Ice Rte Sw 1(Prp-Yel) **5vdc**
10-5 Ice Rte Sw 2 (Wht-Yel) **5vdc**

RF4287HA

CN73 All 120vac
1-(CN70-11) Cube Solenoid (Yel-Red)
3-(CN70-11) Auger Motor (Pnk-Red)
5-(CN70-11) Dispenser Valve (W/Blk-Red)
7-(CN70-11) I/M Valve Fridge (Prp-Red)
9-(CN70-11) Ice Cover Route (Blu-Red)
11-(CN70-11) I/M Motor CW (R) (Brn-Red)
13-(CN70-11) I/M Motor CCW (R) (Wht-Red)

CN78
1-2 Fz LEDs (Brn-Prp)
3-5 FF LEDs (Red-Blk)
6-7 Mid Drawer LED (W/Blk-Gry)
8-12 Ambient Sensor (Yel-Yel) **1.2~2 vdc**
10-(CN76-1) Ice Room Sensor (Org-Gry) **3~3.8vdc**

CN75 To Comp Inverter Board
2-(CN76-1) (Brn-Gry) **5vdc**
4-(CN76-1) Comp control (Org-Red) **2.5vdc**

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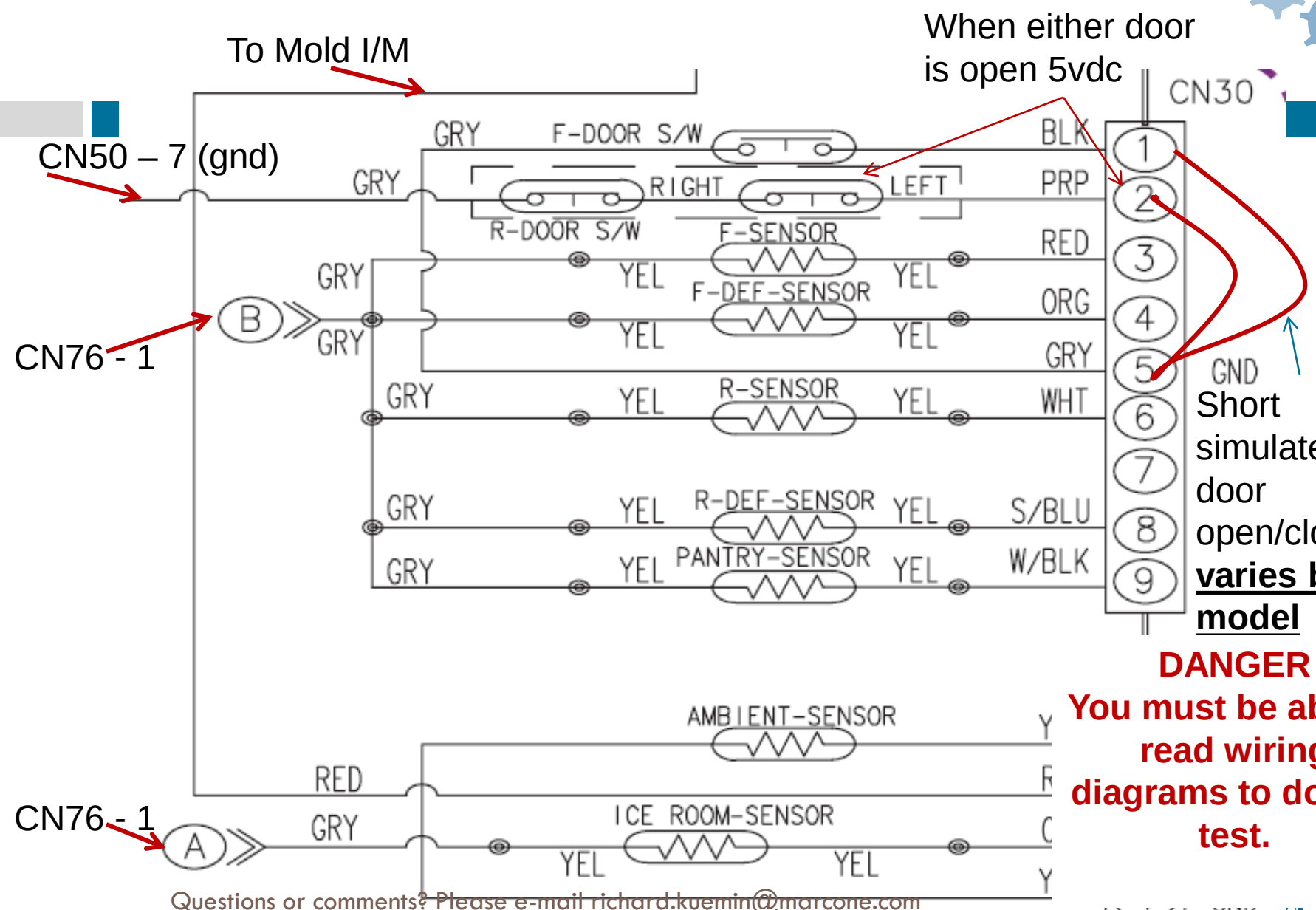
Sensors - Door Switch



Short simulates door open/closed **varies by model**

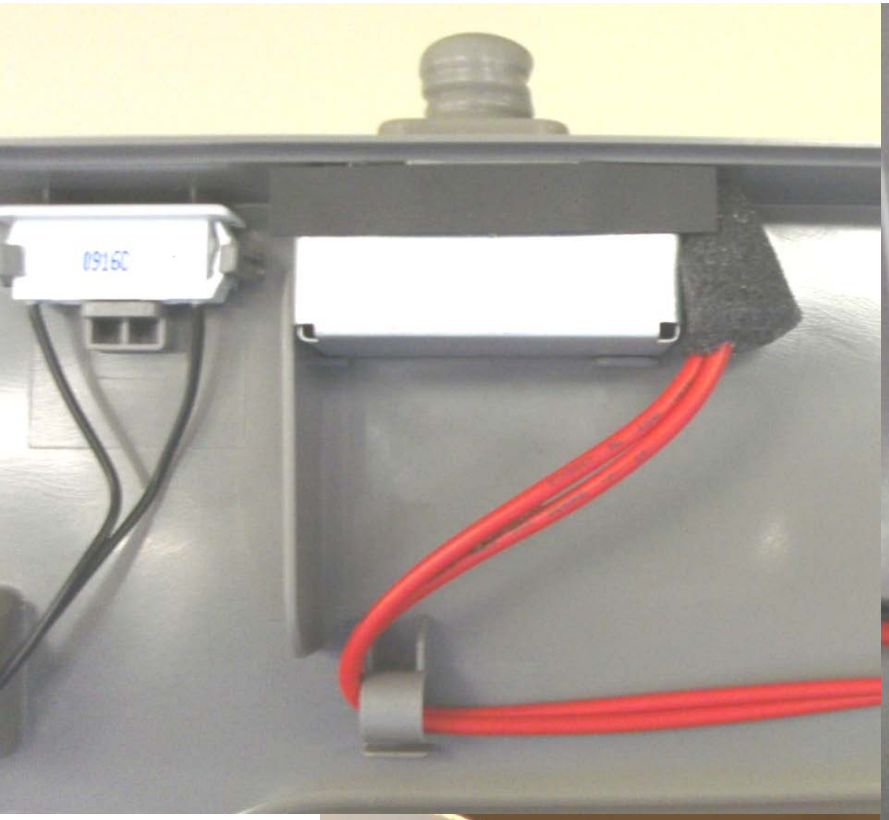
DANGER

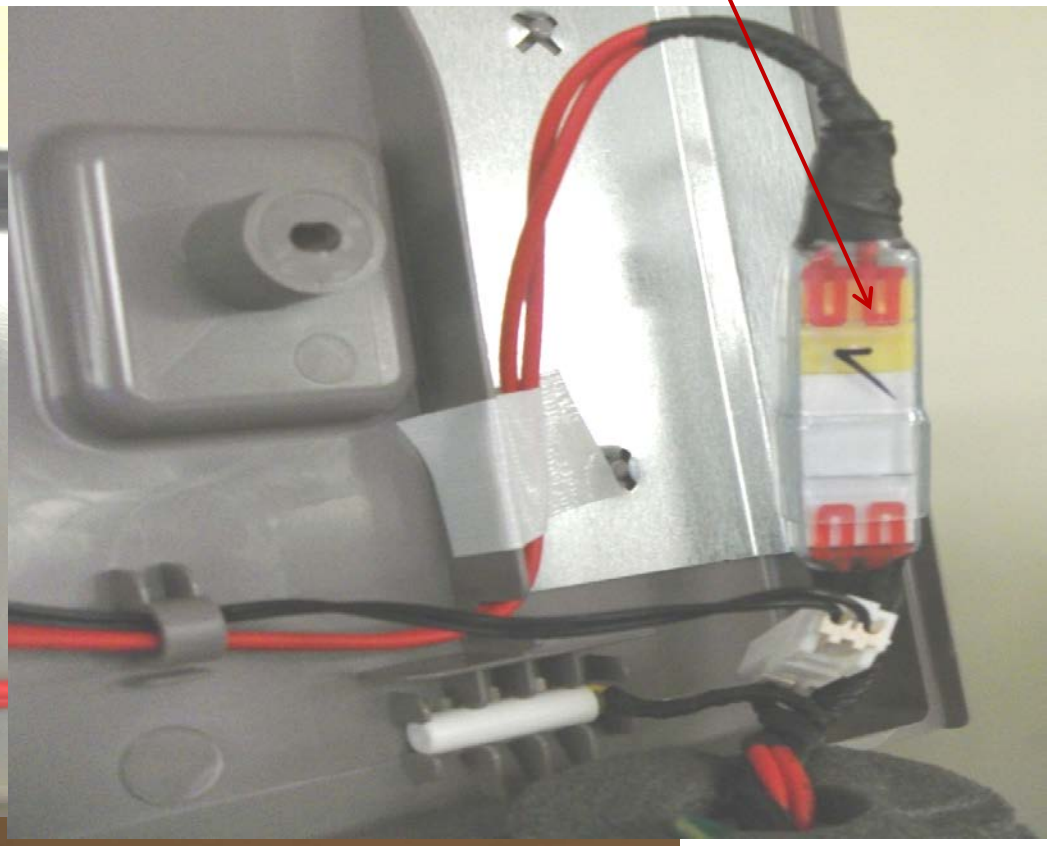
You must be able to read wiring diagrams to do this test.

Questions or comments? Please e-mail richard.kuemin@marcone.com

Auger Failure

Installer may have damaged/not connected connector





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Testing Cube Solenoid & Auger Motor bypass the PCB

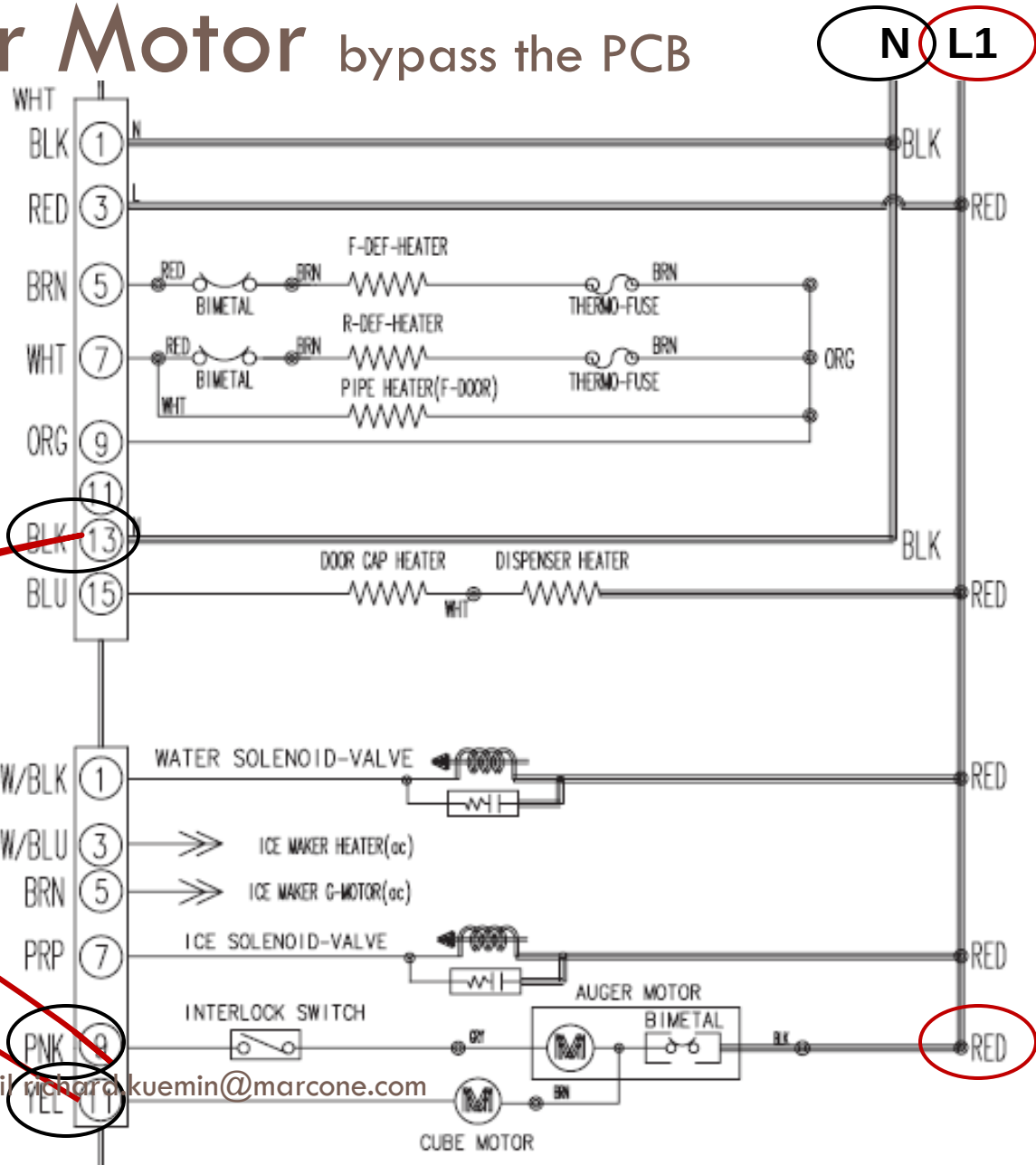
DANGER

You must be able to read wiring diagrams to do this test.

Cube Solenoid & Auger Mtr are tied to L1 (Red), in most models.

Remove power.

To activate, Jumper Neutral, in most models, to the component, power unit and component activates



Questions or comments? Please e-mail richard.kuemin@marcone.com

Temperature/Resistance/Voltage Chart - **ALL Fridge Sensors**

Temp. (°F)	Resistance(kΩ)	Voltage (V)	Temp. (°F)	Resistance (kΩ)	Voltage (V)	Temp. (°F)	Resistance (kΩ)	Voltage (V)
-43.6	98.9	4.54	12.2	21.4	3.41	68.0	6.01	1.88
-41.8	93.7	4.52	14.0	20.5	3.36	69.8	5.79	1.83
-40.0	88.9	4.49	15.8	19.6	3.31	71.6	5.58	1.79
-38.2	84.2	4.47	17.6	18.7	3.26	73.4	5.38	1.75
-36.4	79.8	4.44	19.4	17.9	3.21	75.2	5.19	1.71
-34.6	75.7	4.42	21.2	17.2	3.16	77.0	5.00	1.67
-32.8	71.8	4.39	23.0	16.4	3.11	78.8	4.82	1.63
-31.0	68.2	4.36	24.8	15.7	3.06	80.6	4.65	1.59
-29.2	64.7	4.33	26.6	15.1	3.01	82.4	4.49	1.55
-27.4	61.5	4.30	28.4	14.5	2.96	84.2	4.33	1.51
-25.6	58.4	4.27	30.2	13.9	2.90	86.0	4.18	1.47
-23.8	55.6	4.24	32.0	13.3	2.85	87.8	4.03	1.44
-22.0	52.8	4.20	33.8	12.7	2.80	89.6	3.89	1.40
-20.2	50.2	4.17	35.6	12.2	2.75	91.4	3.76	1.37
-18.4	47.8	4.13	37.4	11.7	2.70	93.2	3.63	1.33
16.6	45.5	4.10	39.2	11.3	2.65	95.0	3.51	1.30
-14.8	43.3	4.06	41.0	10.8	2.60	96.8	3.39	1.27
-13.0	41.2	4.02	42.8	10.4	2.55	98.6	3.28	1.23
-11.2	39.2	3.99	44.6	10.0	2.50	100.4	3.17	1.20
-9.40	37.4	3.95	46.4	9.60	2.45	102.2	3.06	1.17
-7.60	35.7	3.91	48.2	9.20	2.40	104.0	2.96	1.14
-5.80	34.0	3.86	50.0	8.80	2.35	105.8	2.86	1.11
-4.00	32.4	3.82	51.8	8.50	2.30	107.6	2.77	1.09
-2.20	30.9	3.78	53.6	8.20	2.25	109.4	2.68	1.06
-0.40	29.5	3.73	55.4	7.90	2.20	111.2	2.59	1.03
1.40	28.1	3.69	57.2	7.60	2.15	113.0	2.51	1.00
3.20	26.9	3.64	59.0	7.30	2.10	114.8	2.43	0.98
5.00	25.7	3.60	60.8	7.00	2.06	116.6	2.35	0.95
6.80	24.5	3.55	62.6	6.70	2.01	118.4	2.28	0.93
8.60	23.4	3.50	64.4	6.50	1.97	120.2	2.21	0.90
10.4	22.4	3.46	66.2	6.20	1.92			

Table A

Questions or comments? Please e-mail richard.luemin@marcone.com

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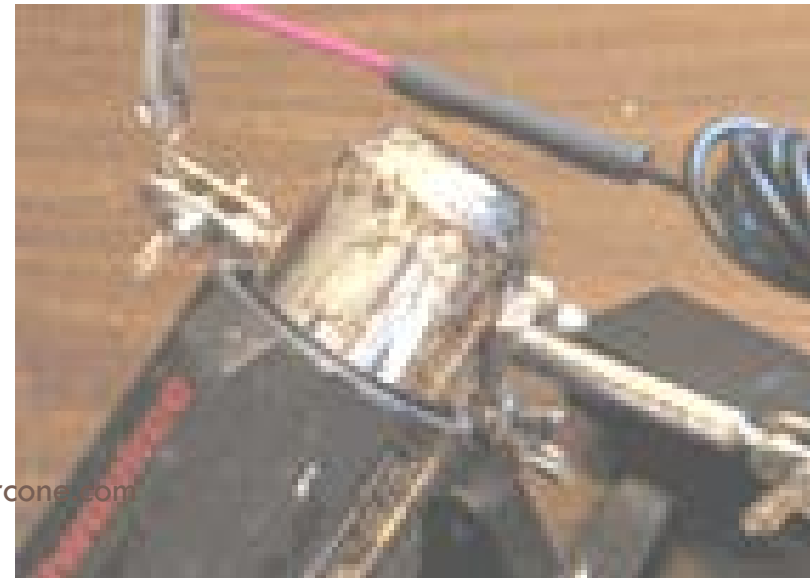
Proper Splicing, when necessary



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Fridge Cooling Issues
Freezer OK

No Cool

- Single Evaporator Models
  - Auto Damper Ass'y
  - Frost in air duct to fridge
  - Door seal
  - Defrost Failure
  - Main PCB
  - Compressor/Sealed System

Questions or comments? Please e-mail richard.kuemin@marcone.com

Fridge Cooling Issues
Freezer OK

No Cool

- Twin & Quattro Evaporator Models
  - Door seal
  - Defrost Failure
  - Defrost Drain Failure
  - Main PCB
  - Evap Fan
  - Compressor/Sealed System (diverter models only)

Questions or comments? Please e-mail richard.kuemin@marcone.com

Freezer Cooling Issues

No Cool

- Single Evaporator Models
  - Frost build up stopping evaporator fan
  - Evap Fan
  - Door seal
  - Defrost Failure
  - Compartment Sensor
  - Main PCB
  - Compressor/Sealed System

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Freezer Cooling Issues
Fresh Food OK

No Cool

- Twin & Quattro Evaporator Models
  - Door seal
  - Defrost Failure
  - Defrost Drain Failure
  - Compartment Sensor
  - Evap Fan
  - Main PCB
  - Compressor/Sealed System

Questions or comments? Please e-mail richard.kuemin@marcone.com

Fridge Cooling Issues

Poor Cooling

- Single Evaporator Models
  - Auto Damper Ass'y
  - Frost in air duct to fridge
  - No or very small food load
  - Door seal
  - Defrost Failure
  - Main PCB
  - Compressor/Sealed System

Questions or comments? Please e-mail richard.kuemin@marcone.com

Fridge Cooling Issues

Poor Cooling

- Twin & Quattro Evaporator Models
  - Door seal
  - Defrost Failure
  - Defrost Drain Failure
  - Main PCB
  - Compressor/Sealed System (diverter model only)

Questions or comments? Please e-mail richard.kuemin@marcone.com

Freezer Cooling Issues

Poor Cooling

- Single Evaporator Models
  - Frost build up blocking evaporator fan
  - Door seal
  - Defrost Failure
  - Compartment Sensor
  - Main PCB
  - Evap Fan
  - Compressor/Sealed System

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Freezer Cooling Issues

Poor Cooling

- Twin & Quattro Evaporator Models
  - Frost build up blocking evaporator fan
  - Door seal
  - Defrost Failure
  - Compartment Sensor
  - Main PCB
  - Compressor/Sealed System

Questions or comments? Please e-mail richard.kuemin@marcone.com

Fridge Cooling Issues

Too Cold

What's the most important question to ask?
(where and what shelf is freezing?)

- Single Evaporator Models
  - Auto Damper Ass'y
- Twin & Quattro Evaporator Models
  - **Failure on Main PCB causing evaporator fan to stay on.**
  - Failure of Compartment Sensor.
  - Evaporator Cover Ass'y not properly installed or damaged.
  - **Pantry** or Cool Zone **auto damper stuck open**

Freezer Cooling Issues

Too Cold

- Single Evaporator Models
  - Failure of Compartment Sensor.
  - Failure on Main PCB causing evaporator fan to stay on.
  - **Using large amounts of ice or water not hooked up.**
- Twin & Quattro Evaporator Models
  - Failure on Main PCB causing evaporator fan to stay on.
  - Failure of Compartment Sensor.
  - **Using large amounts of ice or water not hooked up.**

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Frost in Freezer Most Models

FREEZER TEMPERATURE CONTROL BY THE ICE MAKER

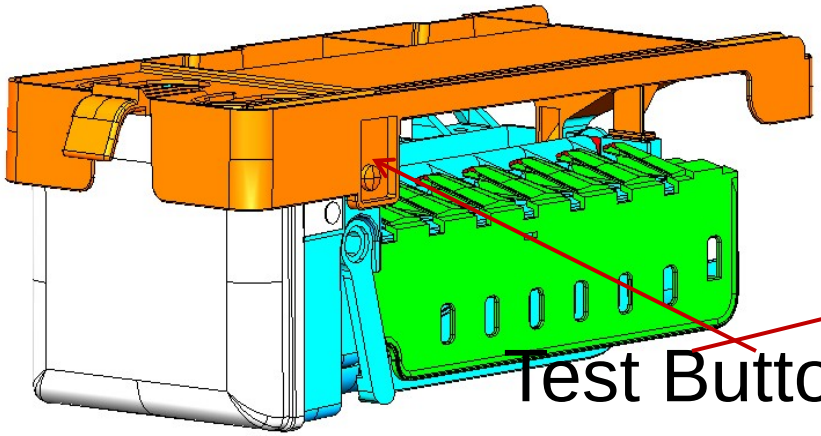
Very cold temps will cause frost in the freezer with door openings

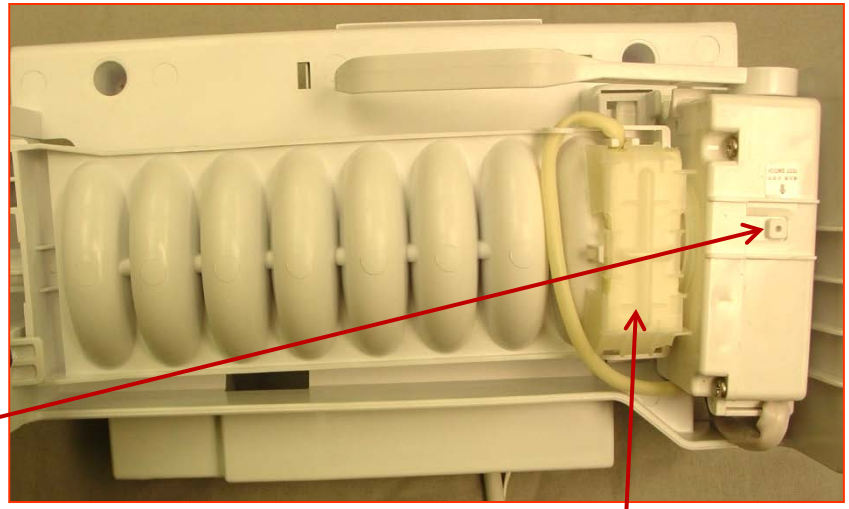
- Interior Temperature of the freezer MAY be set to a much colder temp until the ice bucket is full. When the ice bucket is full, the freezer will maintain original set temperature. Also, whenever the ice is used, the freezer will again set to a much colder temp.
- Selecting "Ice Off" will allow the freezer to be controlled by the set temperature.
- If water is not hooked up, the freezer will always be at a much colder temp unless "Ice Off" is selected.

Questions or comments? Please e-mail richard.kuemin@marcone.com

Ice Makers

- Heat Release (7 & 9 Cube I/M)
  - Ice Maker Sensor / Ice Room Sensor





- Flex Tray (new 8 cube trays)
  - Sensor Harvest Control

Questions or comments? Please e-mail richard.kuemin@marcone.com

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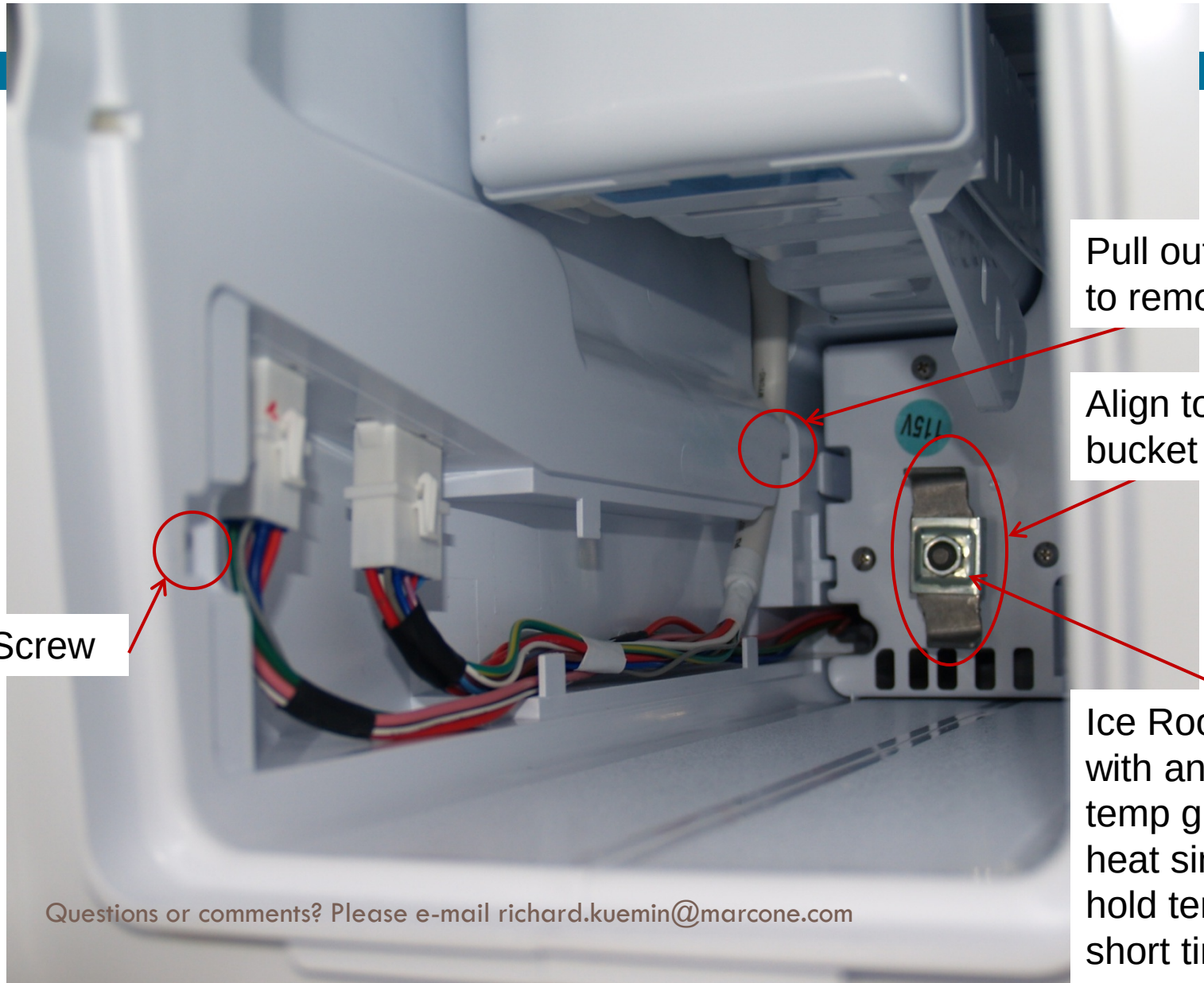
Ice/Auger Harness



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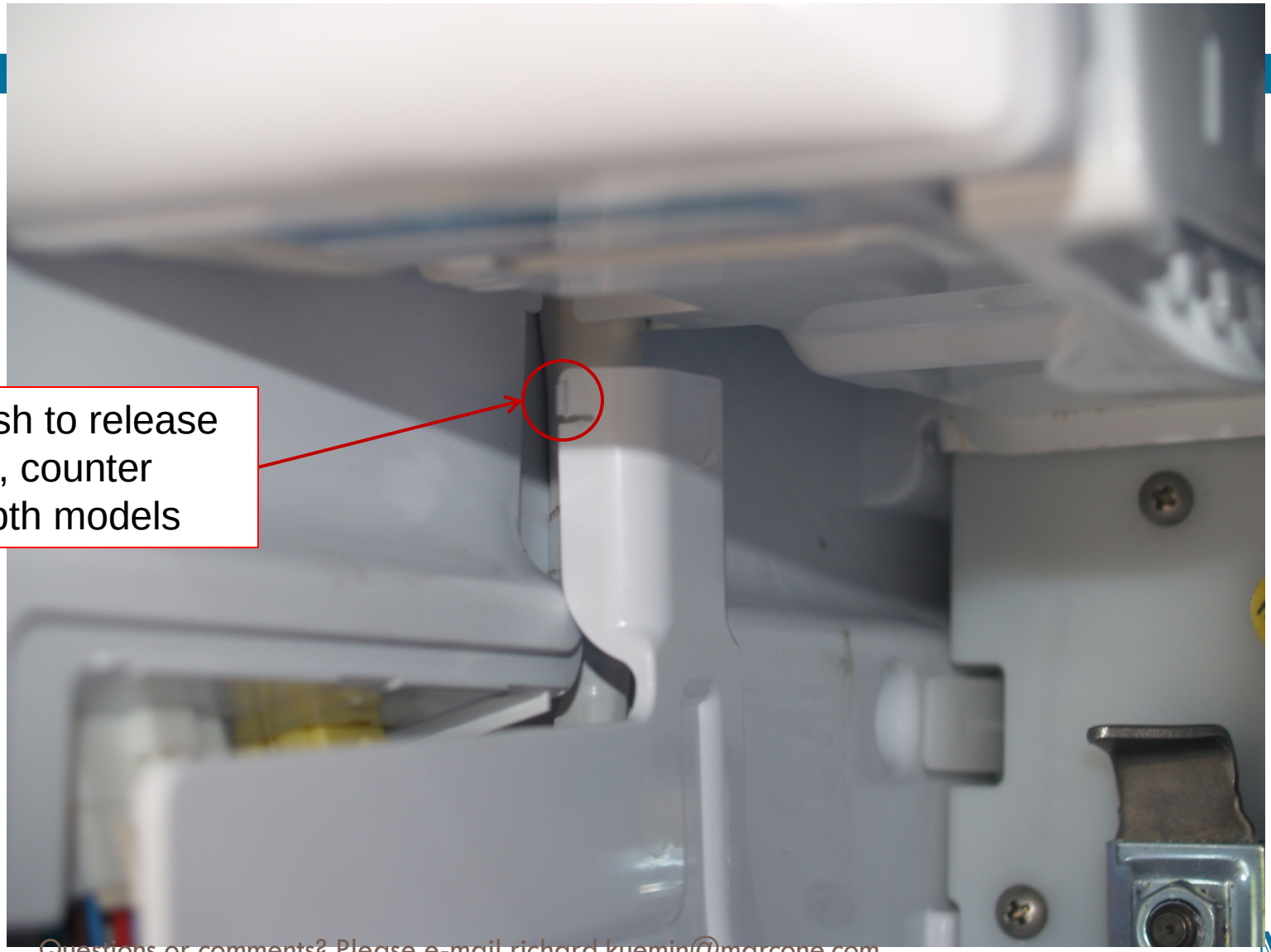
Ice/Auger Harness Cover



Ice Makers

- RFG293HA French Door has the I/M in the freezer.
- It's now a **Heat Release** I/M

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Heat Release **Ice Maker**

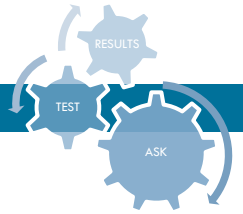
Ice Production & Test Explanation

- 38 minutes after the water fill is complete, the control board will check the temperature of the eject Thermistor, on the Ice Maker Head. If the Thermistor reads a temperature lower than 18.5 degrees for more than 5 seconds, the Ice maker will harvest if the ice bucket is not sensed as full.
- Press and hold the ICE TEST S/W for at least 1.5sec, the harvest function will start. The Ice maker heater turns on for 30 seconds to 2 minutes. After the Ice maker heater turns off, the Ice maker harvest motor turns on. The motor will rotate in right direction for about 3 minutes, after this, water supply valve is turned on, then the valve is turned off, the test mode is completed. If the above operation is not carried out within 6 minutes, it will go into a fault mode.
- <u>You must have patience, this is not as fast as the flex tray test cycle.</u>

Questions or comments? Please e-mail richard.kuemin@marcone.com

Heat Release I/M French Door

Ice Room Fan Operation



- **Making Ice**
- Fan Off at 3.68vdc Ice Room Sensor 1.5F
- Fan On at 3.54vdc Ice Room Sensor 7F

- **Full bucket, or ice off**
- Fan Off at about 3.35vdc Ice Room Sensor 14.5F
- Fan On at about 2.91vdc Ice Room Sensor 29F

Questions or comments? Please e-mail richard.kuemin@marcone.com

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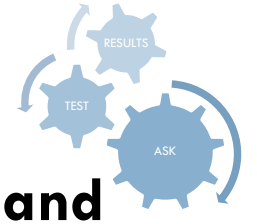
Heat Release I/M Testing



All Tests must be done before the Ice Bucket is removed and with the compressor running.

- Ice Room Sensor – record voltage and convert to temp.
- Ice Maker Eject Sensor - record voltage and convert to temp.
- Ice Room Fan – 7-11 vdc – is it OK?

  proper voltage means motor speed is correct.
- Freezer Defrost Sensor - record voltage and convert to temp.

If Ice Bucket is full, fan may be off, Ice Room and I/M Sensor may be around 23°.

- When making ice, the Ice Room should be around 6°. The I/M Sensor will be above 18°. The Ice Room Fan may be running. With the compressor running the Freezer Defrost Sensor should be around -10°.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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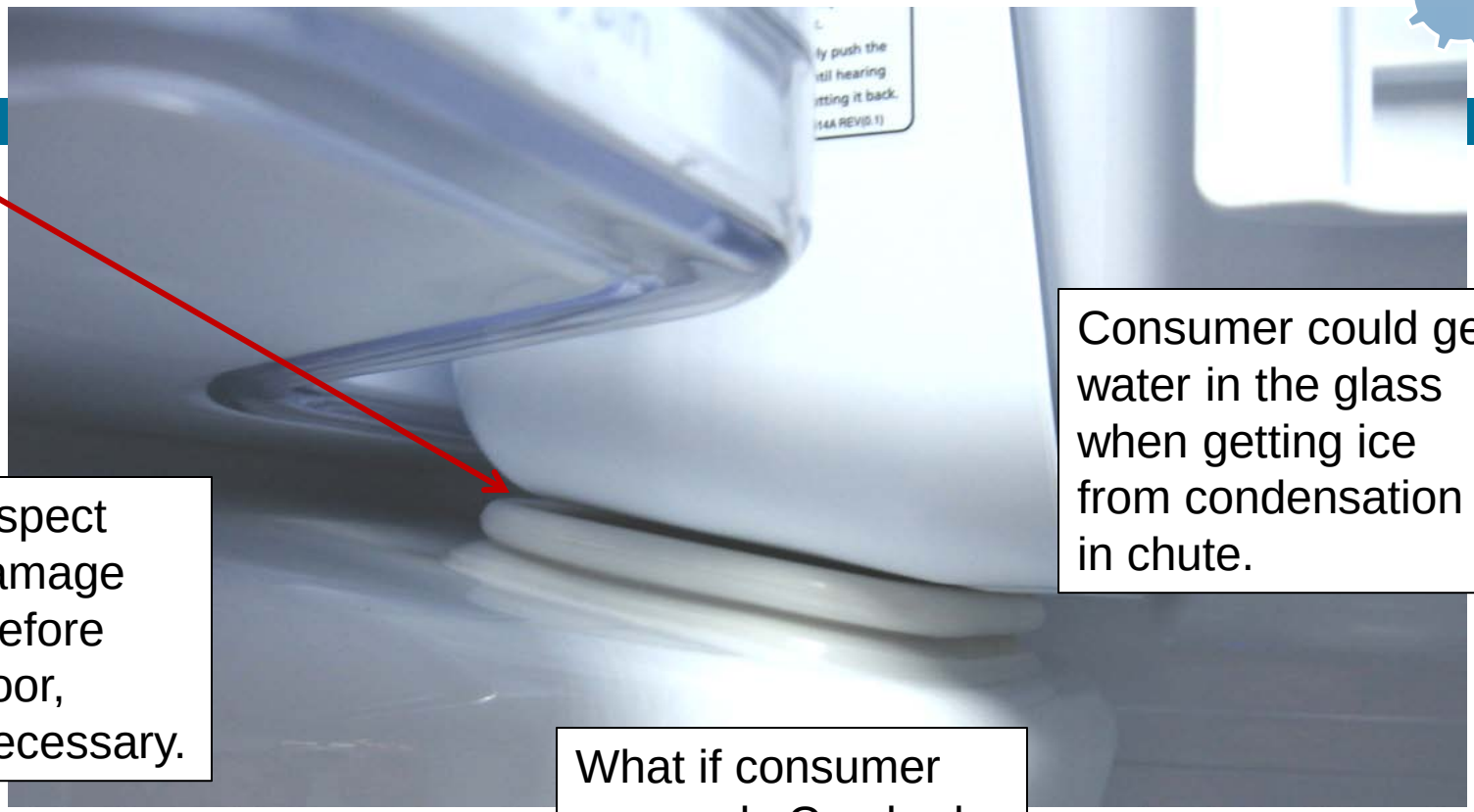
No, Slow and/or "wet" ice

Door adjust is too low or bent hinge.



Carefully inspect hinge for damage (bending) before adjusting door, replace if necessary.

Consumer could get water in the glass when getting ice from condensation in chute.

What if consumer uses only Crushed Ice? Water in the chute from melting "snow".

Use this part # to raise door height
DA60-00143B
Description : FASTENER-RING INSERT

Questions or comments? Please e-mail richard.kuemin@marcone.com

Service Concerns

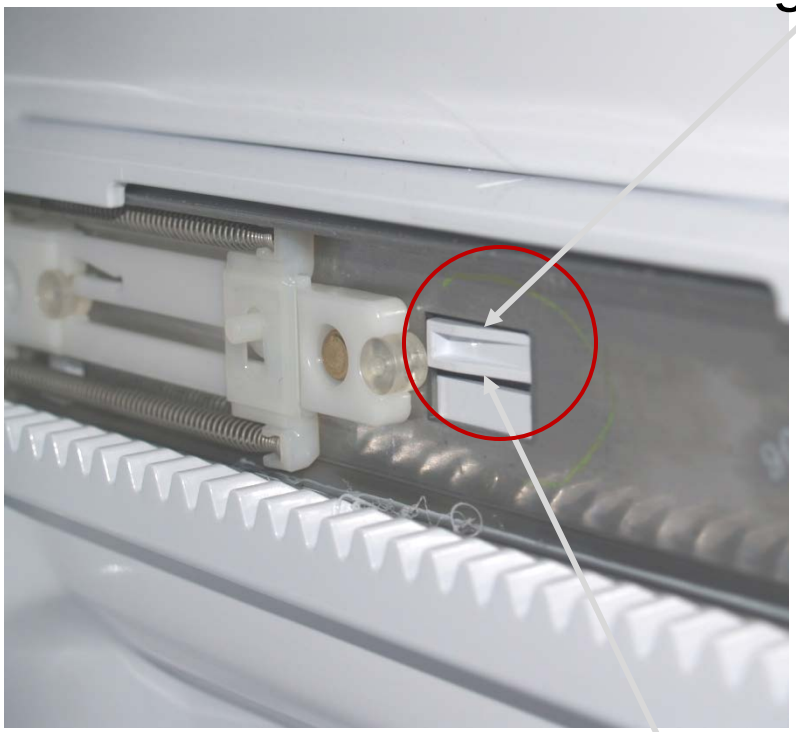
Heat Release I/M Troubleshooting Observations

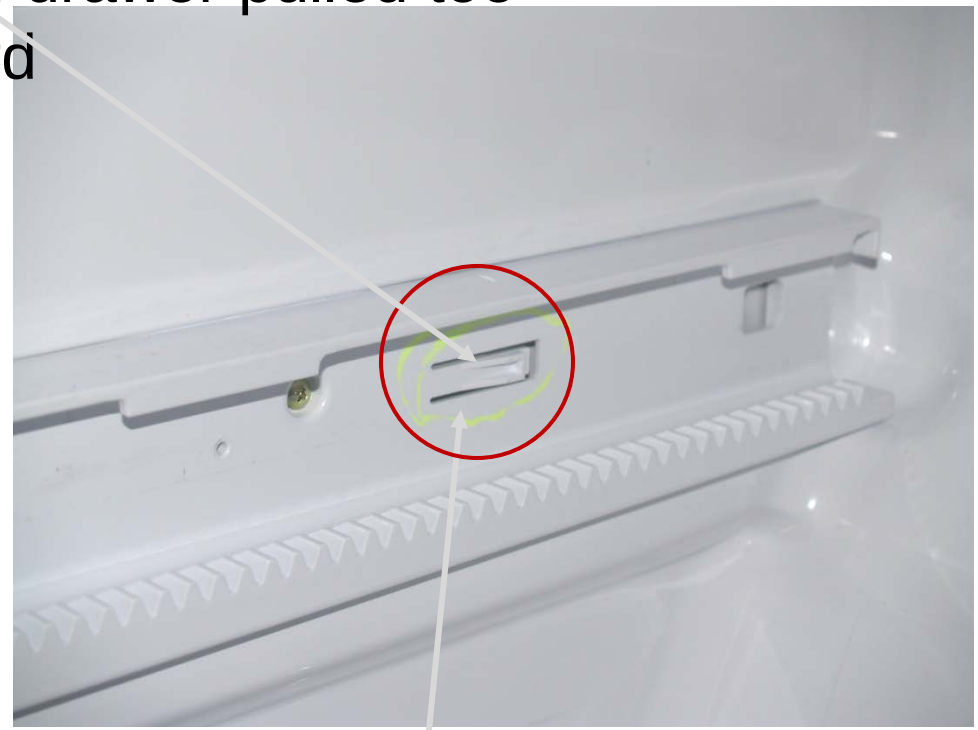
- Is there any frost in the freezer compartment?
- Excessive frost on the evaporator coil will either coat the coil enough to warm the air to 32 degrees to supply the ice room or block the air duct completely to the ice room. Make sure the Freezer defrost circuit is working properly and the freezer and ice room compartments are sealed properly
- The Ice-Duct Heater is a foil heater the keeps the duct, on the evaporator cover, from frosting up and blocking air flow to the I/M. If this heater fails there will be low or no ice production.

Questions or comments? Please e-mail richard.kuemin@marcone.com

Removal of Freezer Drawer

Possible breakage if drawer pulled too hard





To Remove Drawer Rail/Door Ass'y

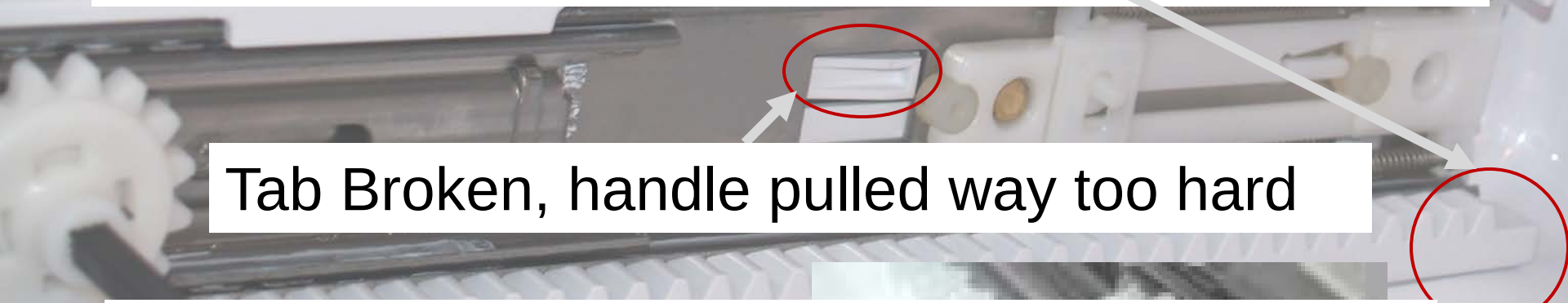
Push Plastic Locking Tab on each side to release.

Freezer Drawer

Reasons for Frost Buildup

Water not hooked up, I/M is on

Gear alignment off, drawer pulled open from one side of the handle too hard.



Tab Broken, handle pulled way too hard

Bar Missing, from plastic rivet not installed

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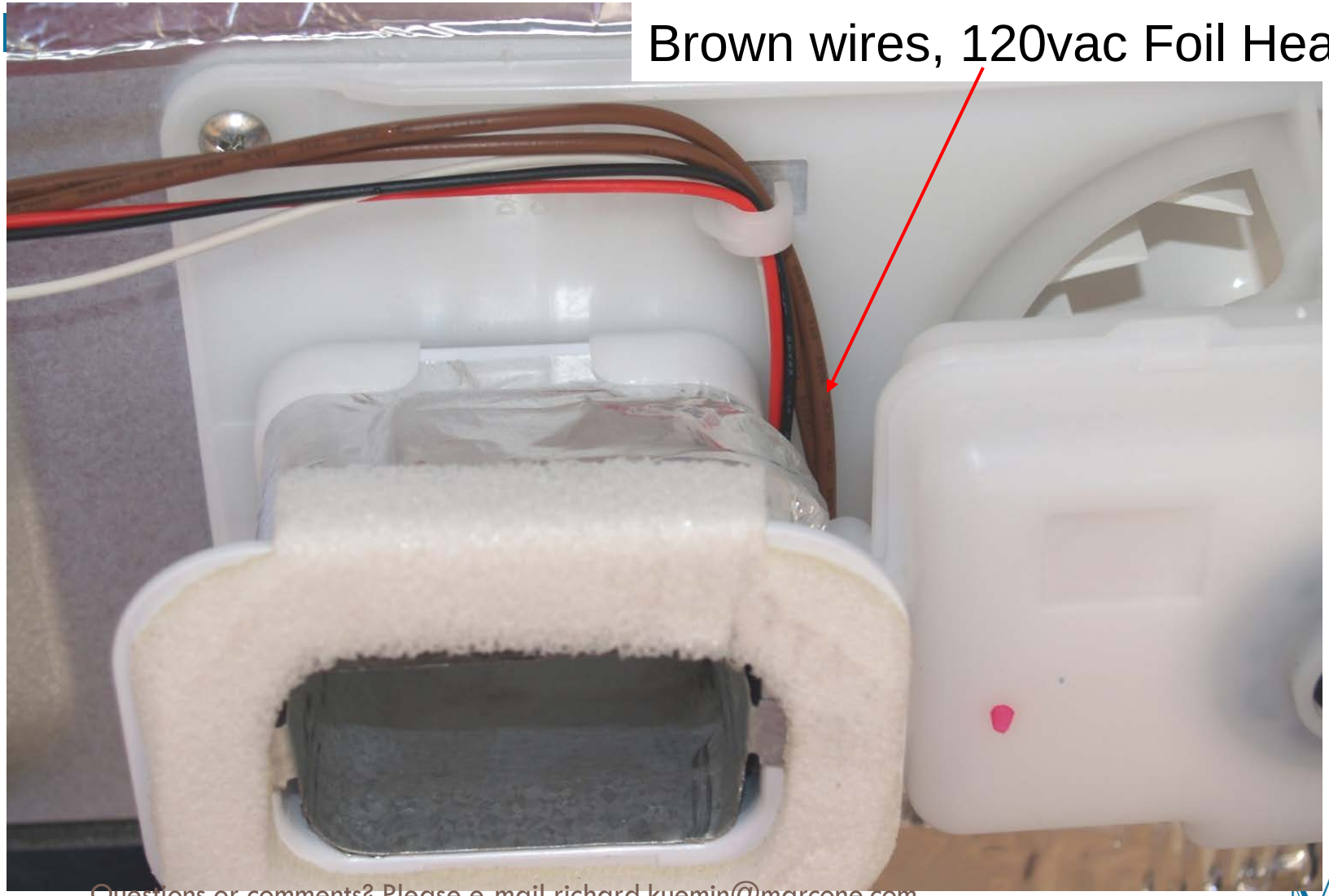
Ice Duct Heater



Questions or comments? Please e-mail richard.kuemin@marcone.com

Twin I/M Models

A Heat Release I/M is used in the Ice Room
A Flex Tray I/M is used in the Freezer

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Model : RFG298AA**/XAA Dual Ice Maker

RED=I/M

nominal voltages listed

CN31 Sensor
1-4 Ambient Sensor (Wht-Wht) **1.2~2 vdc**
2-(CN90-8) I/M (Blu-S/Blu) **5vdc**
3-(CN76-1) Ice Room Sensor (Org-Gry) 3~3.8vdc

CN74 A/C Load **120vac**
1-(CN70-9) Cube Solenoid (Yel-Red)
3-(CN70-9) Auger Motor (Pnk-Red)
5-(CN70-9) Dispenser Valve (W/Blk-Red)
7-(CN70-9) I/M Valve Fridge (Prp-Red)
9-(CN70-9) Ice Cover Route (Blu-Red)
11-(CN70-9) I/M Motor CW (R) (Brn-Red)
13-(CN70-9) I/M Motor CCW (R) (Wht-Red

CN71 A/C Load **120vac**
3-(CN70-9) F Lamp (Prp-Red)
5 N (Gray)
9 Heater Common (Org)

CN70 A/C Load **120vac**
1-11 I/M Heater (Blk-Gry)
3-11 French-Dsp Heaters (Yel-Gry)
5- (CN71-9) R Defrost (Wht-Org)
7- (CN71-9) F Defrost/Ice Duct heater (Brn-Org)
9- L1 (Red)
11- N (Gry)

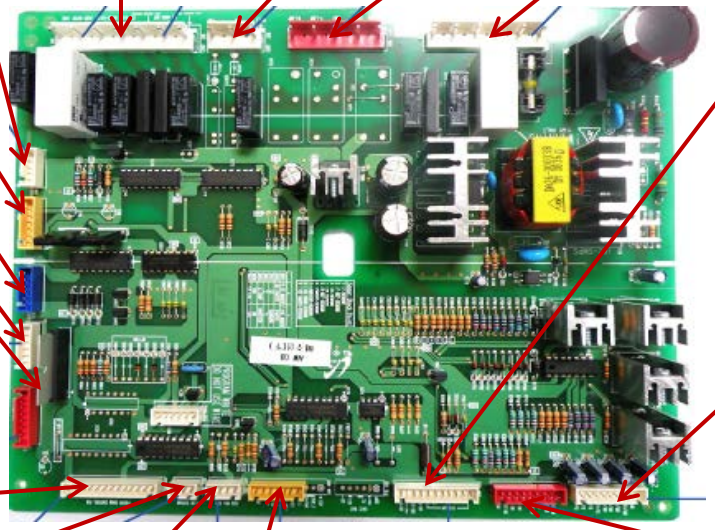
CN78 Lamp/Veg LED
4-7 (Red-Gry) **13vdc**

CN77 Stepper Motor
1-(CN76-1) (Red-Gry) **13vdc**

CN72 A/C Load**120vac**
5-(CN70-9) Ice Maker Valve Frz (Brn-Red)

CN91 Pantry Room Damper
1-2 Damper Heater (Blk-Brn) **12vdc**
3-4 Damper Motor (Wht-Blu)
5-6 Damper Motor (Yel-Red)

CN50 Display
4-6 (Org-Pnk) **13vdc**
5-6 (Yel-Pnk) **5vdc**
7 Fridge Door Sw (Gry) **(vdc ground)**
8-6 Ice/Water Sw (Blu-Pnk) **5vdc**
9-6 Ice Rte Sw 1(Prp-Gry) **5vdc**
10-6 Ice Rte Sw 2 (Wht-Gry) **5vdc**
11 Fridge I/M Horiz Sw (S/Blu) 5vdc



CN90 Ice Maker
1-2 I/M Mtr Frz (Red-Blk) 13vdc
3-4 Eject Sensor Frz(Wht-Wht) 2.1~3.7vd
5-8 Test Sw Frz (Gry-S/Blu) 5vdc
6 Full Hall IC Fridge I/M (Blu)
7 Horiz Hall IC Frz (Prp)
8 **Ground vdc** (S/Blu)

CN76 F, R, C Fans
2-1 Ice Room Fan (Blk-Gry)7-11vdc
3-1 F Fan (Yel-Gry) **7-11vdc**
4-1 R Fan (Org-Gry) **7-11vdc**
5-1 C Fan (S/Blu-Gry) **7-11vdc**
6 Ice Room Fan FG(Pnk)
7 F Fan FG(Brn)
8 R Fan FG(Red)
9 C Fan FG(Blu)

CN51 Pantry Room
7-5 (Blu-Wht) **13vdc**

CN32 Flow Sensor (Frz I/M)
3-2 (Red-Blk) **5vdc**

CN30 Sensors & Switches
1-5 Freezer Dr Sw (Blk-Gry) **5vdc**
2-(CN50-7) R Door Sw (Prp-Gry) **5vdc**
3-(CN76-1) F Sensor (Red-Gry) 3.5~4.2vdc
4-(CN76-1) F Def Sensor (Org-Gry) 2.3~4.2vdc
6-(CN76-1) R Sensor (Wht-Gry) **2.4~2.8vdc**
7-(CN76-1) Eject Sensor Fridge I/M (Brn-Gry) 2.1~3.3vdc
8-(CN76-1) R Def Sensor (S/Blu-Gry) **2~4.2vdc**
9- (CN76-1) Pantry Sensor (W/Blk-Gry) **2.6~2.8vdc**

CN75 To Comp Inverter Board
1- (CN76-1) Test Sw Fridge I/M (Blk-Gry)
2- (CN76-1) (Brn-Gry) **5vdc**
4-3 Compressor control (Org-Red) **2.5vdc**

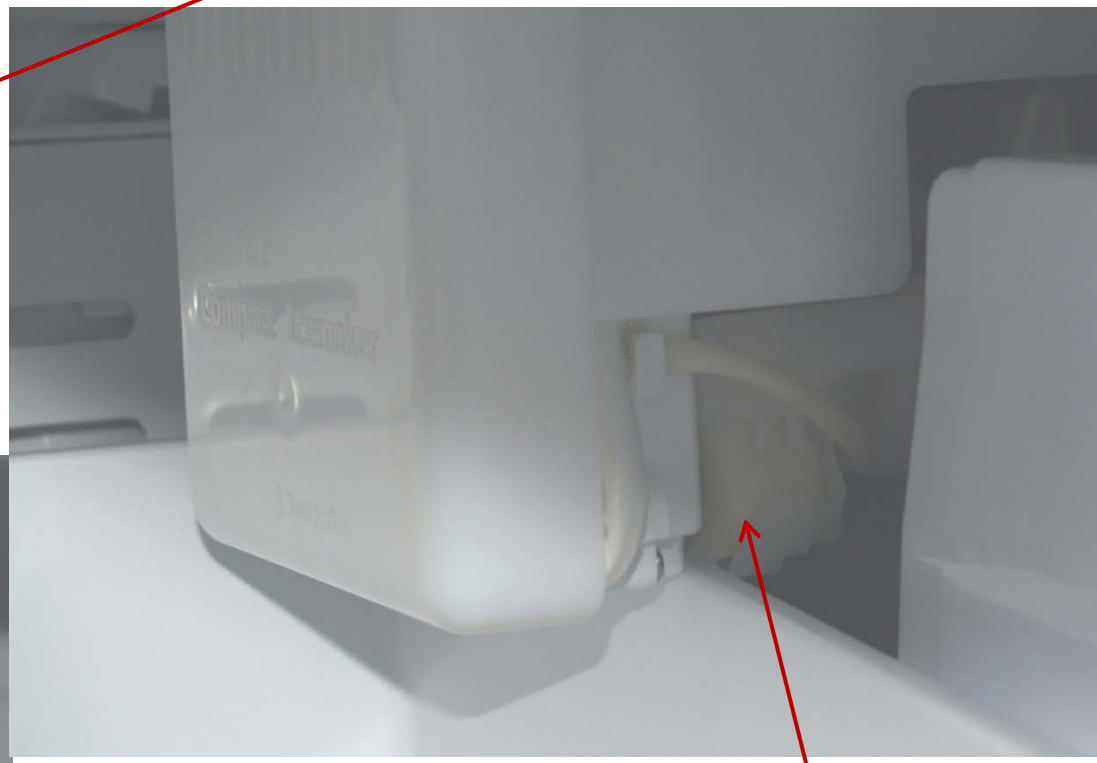
CN79
2-7 Fill tube heater freezer (Blu-Wht) 13vdc
3-7 Water Tank Htr (Pnk-Wht) **13vdc**

Questions or comments? Please e-mail richard.kuemin@marcone.com

French Door Freezer Flex Tray I/M

Ice Bucket Cut Out slides under head

Corrected in new production



Backwards Ice Bucket No Cut Out hits head & slides under

Backwards Ice Bucket No Cut Out hits head & slides under , tears off Sensor

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Flex Tray **Ice Maker**

Ice production Explanation

- When the initial power is applied, the ice tray will stand by for 2 hours.
- After the 2-hour standby time, the Ice Maker Sensor will check the temperature , when it is lower than **1.5°F** for more than 5 minutes, it will harvest, with or without ice in the tray, then fill with water.
- 58 minutes after water is supplied to the Ice Tray, the Ice Maker Sensor temperature will be checked.
- When the Ice Maker Sensor maintains lower than **1. 5°F** for 5 minutes, it will completes the harvest, if the ice bin is not sensed as full.

Filling the tray

- After the water fill is completed, the ice maker sensor will evaluate water volume, one and a half minutes later. When it detects no or low water level it will add more water. First supply time will be 1.5 sec, next one will be 1 sec and the last will be 2 sec.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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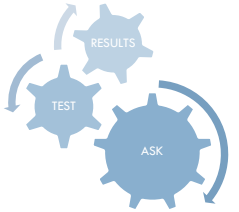
Flex Tray **Ice Maker**



No Ice Production

- #1Confirm Consumer Complaint
- #2 Check Fault Codes
- #3 Check temperature at the I/M
- #4 Run a test harvest

If the Freezer temperature at the I/M is above 1.5° will it make ice?
Verify the I/M works with a test harvest, then troubleshoot the temperature issue.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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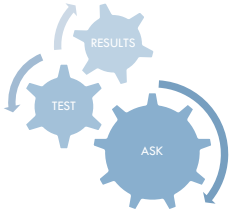
Flex Tray **Ice Maker**



No Ice Production

- If a test harvest doesn't work.
  - Check for 5vdc at the I/M connector, Test Button to DC common on connector.
    - If not there unplug connector and check the PCB I/M connector pins for 5vdc, if there-- I/M is bad. If no 5vdc PCB is bad
  - If 5vdc at test button, activate test, check across I/M motor for approximately 10vdc , polarity should change half way through the cycle. If no voltage, replace PCB.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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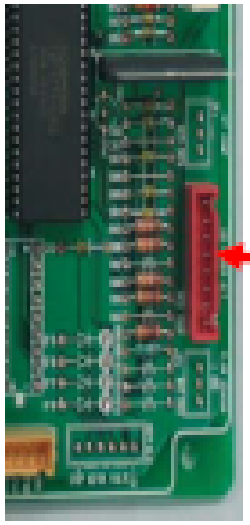
Flex Tray **Ice Maker**

No Ice Production

- If a test harvest doesn't work.
  - Check for 5vdc at the I/M connector, Test Button to DC common on connector.
    - If not there unplug connector and check the pcb I/M connector pins for 5vdc, if there I/M is bad. If no 5vdc PCB is bad



CN90 - Ice Maker
1-2 Eject Motor (Red-Blk) **12vdc**
4-3 Ice Sensor (Wht-Wht) **2.3~3.3vdc**
5-8 Test Switch (Gry-S/Blu)
6-8 **+5vdc** (Blu) +5vdc
7-8 Hall IC Out (Prp-S/Blu)
8 : GND (S/Blu)

Questions or comments? Please e-mail richard.kuemin@marcone.com

Shattered Ice cubes

Service Concerns

Flex Tray I/M Shattered Ice Cubes

- When all ice shatters it's because of a **bad tray** or harvesting at a **temp that is too cold** (lower than 1.5 degrees), in some areas there are **water issues** that can also cause shattered cubes. The temp in the freezer should not have any effect on this issue, as long as it's below 1.5 degrees, as a properly installed sensor will not read the freezer temp, only the water/ice temp.
- Check the Ice tray for defects in the plastic. Impurities or hard water can cause the plastic to become rough and inhibit the ice falling from the tray during the twisting. If this is the case, replace the tray assembly.
- It is possible to get ice too cold. Ice that is too cold will shatter during harvest. This can be from the **(1)** sensor not reading the correct temp **(2)** the sensor not mounted correctly **(3)** by programming the icemaker offset value to a lower number **(4)** the board not understanding the reading.
- To check the sensor you must check the tray temp (not air temp) and compare it to the sensor reading. The sensor should read about 3.7 volts at the main board connector when the cube temperature is 1.5 degrees. After the fill the sensor will read water temp 1.5 to 2.2 volts.
- To clear offsets, put unit into Diagnostics mode.
- **Please note, some shattering is normal for a flex tray icemaker.**

Unique Disassembly Procedures Service Concerns

- Water Pressure
- RM Series
- French Door
- RSG SxS
- Single Evaporator SxS
- RB Series
- RS Series

Questions or comments? Please e-mail richard.kuemin@marcone.com

Checking Water Pressure

Original house water pressure
65 PSI

With the kitchen faucet on the water pressure dropped 9 PSI

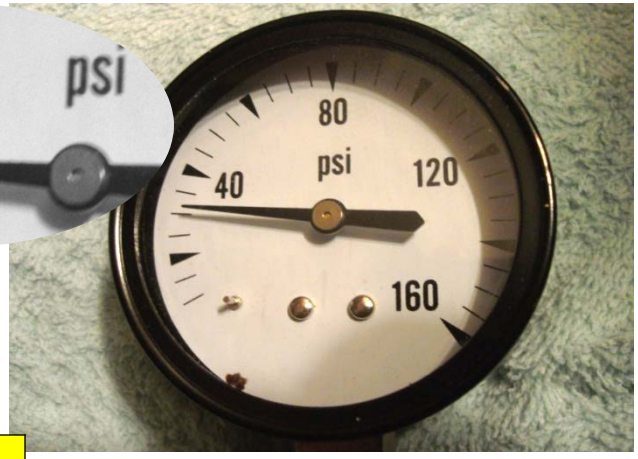
PSI	Seconds fill 8 oz	oz per second
65	8 sec. (8.25 sec.)	1 oz per sec
56	10 sec. (10.01 sec)	1.25 oz per sec

Kitchen faucet on water pressure dropped to **56 PSI**

Water pressure set at **40 PSI**

With the bathroom shower on the water pressure dropped 8 PSI

PSI	Seconds fill 8 oz	oz per second
40	11 sec. (10.51 sec.)	1.4 oz per sec
32	12 sec. (12.35 sec)	1.5 oz per sec



Bathroom shower on water pressure dropped to **32 PSI**

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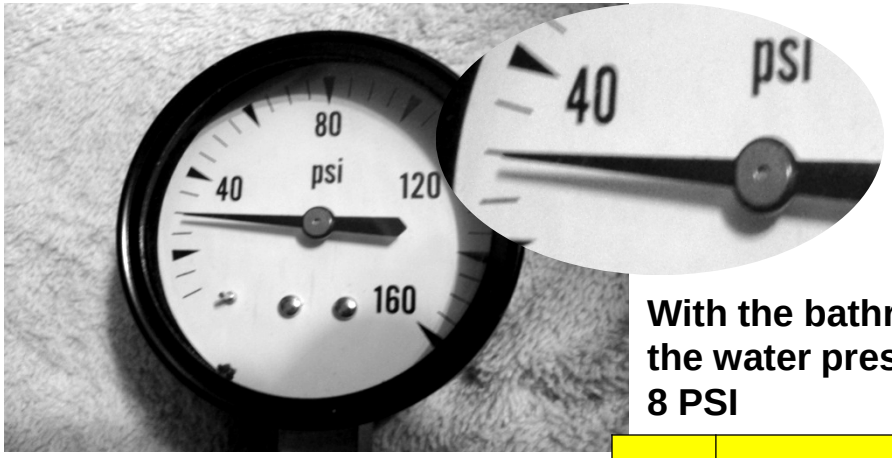
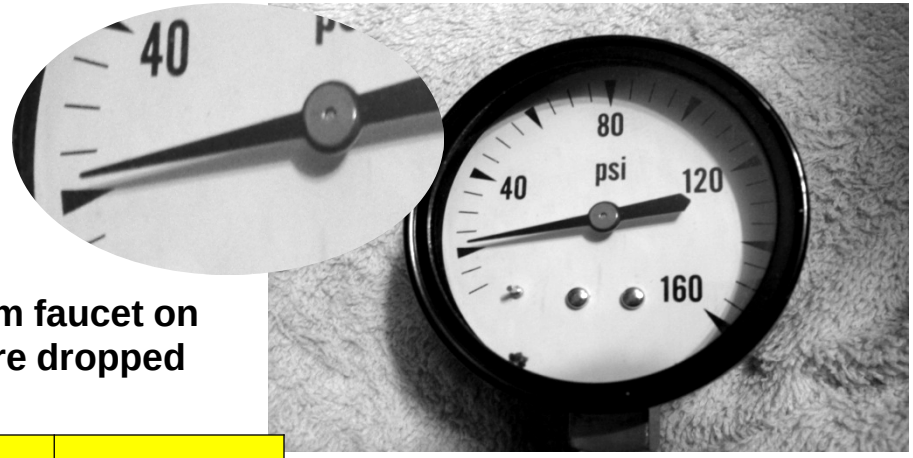
Checking Water Pressure



Water pressure set at **30 PSI**

With the bathroom faucet on the water pressure dropped 8 PSI

PSI	Seconds fill 8 oz	oz per second
30	13 sec. (12.83 sec.)	1.6 oz per sec
22	15 sec. (14.57 sec)	1.9 oz per sec

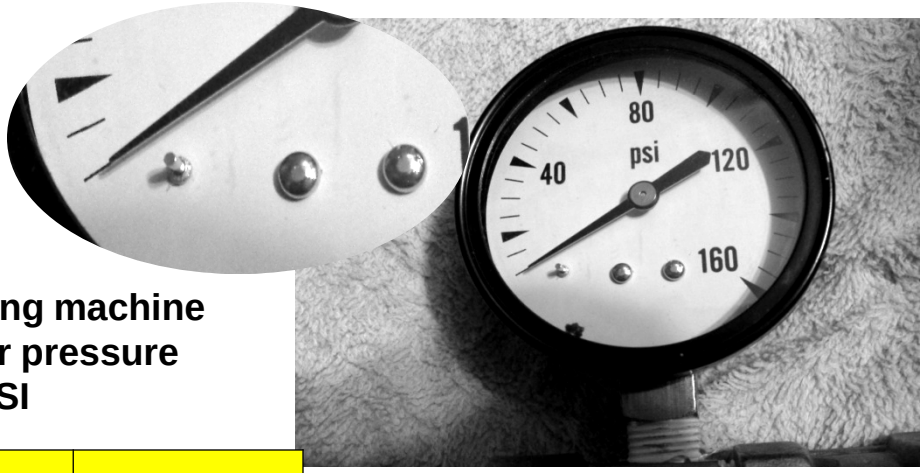


Bathroom faucet on water pressure dropped to **22 PSI**

Water pressure set at **15 PSI**

With the washing machine filling the water pressure dropped 8 PSI

PSI	Seconds fill 8 oz	oz per second
15	17 sec. (17.33 sec.)	2.1 oz per sec
5	26 sec. (26.24 sec)	3.3 oz per sec



Washing machine filling water pressure dropped to **5 PSI**

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Checking Water Pressure

PSI	Seconds fill 8 oz	oz per second
65	8 sec. (8.25 sec.)	1 oz per sec
56	10 sec. (10.01 sec)	0.8 oz per sec
40	11 sec. (10.51 sec.)	0.76 oz per sec
32	12 sec. (12.35 sec)	0.65 oz per sec
30	13 sec. (12.83 sec.)	0.62 oz per sec
22	15 sec. (14.57 sec)	0.55 oz per sec
15	17 sec. (17.33 sec.)	0.46 oz per sec
5	26 sec. (26.24 sec)	0.31 oz per sec

How do we check pressure in the home?

Questions or comments? Please e-mail richard.kuemin@marcone.com

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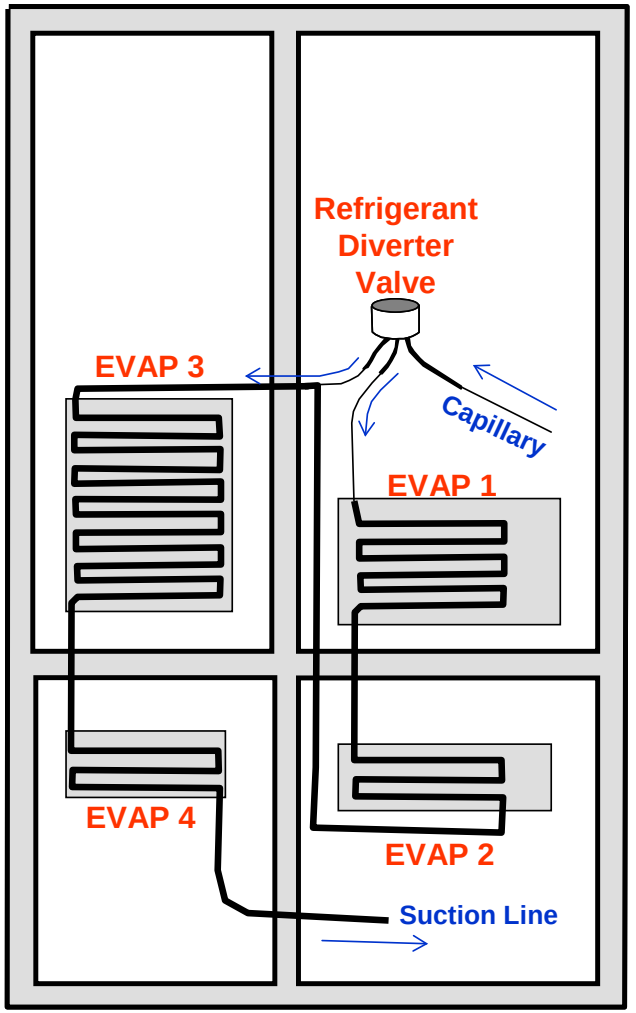
Quattro Series

RM257 (Inverter Comp) RM255****

SAMSUNG Convertible Refrigerator
"*free yourself from the restrictions of conventional refrigerators*"



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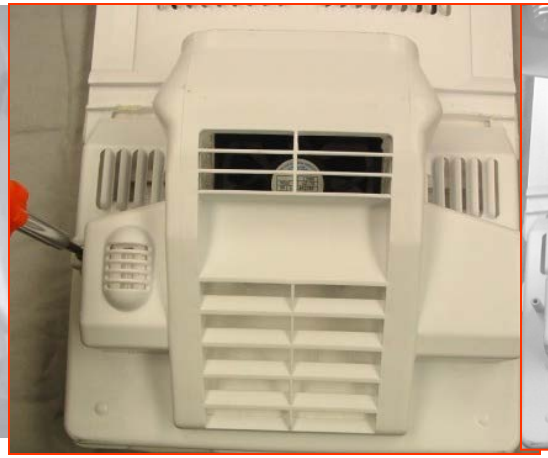
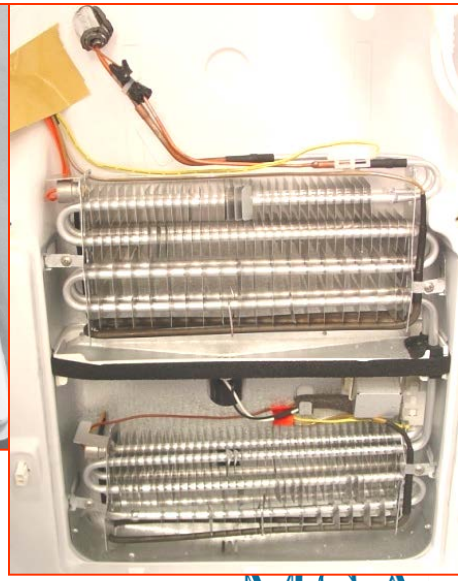
Why have a 4-door Fridge

Questions or comments? Please e-mail richard.kuemin@marcone.com

Service Access

- **Disassembly of Quatro Cool Evaporator Covers, both access the same**





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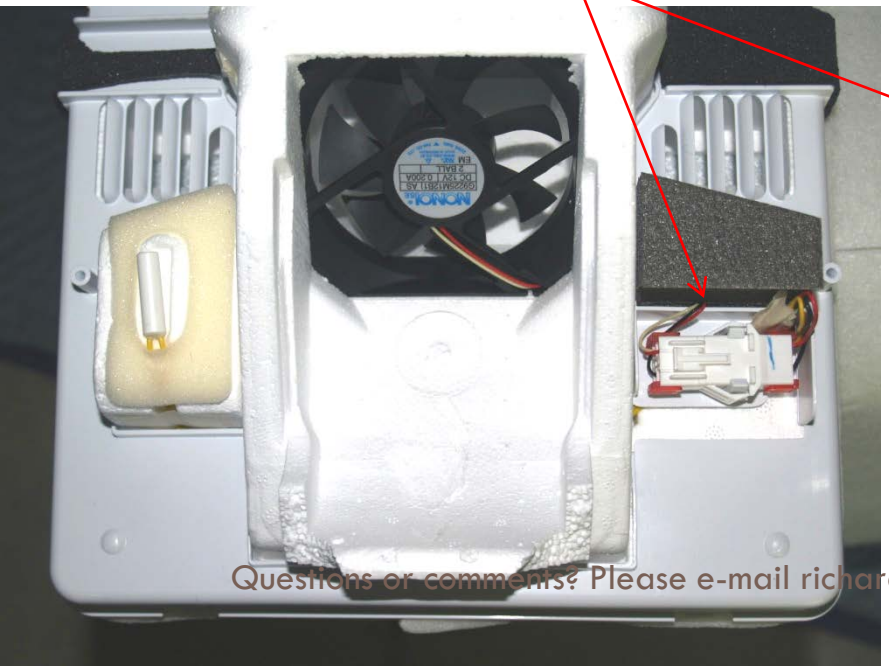
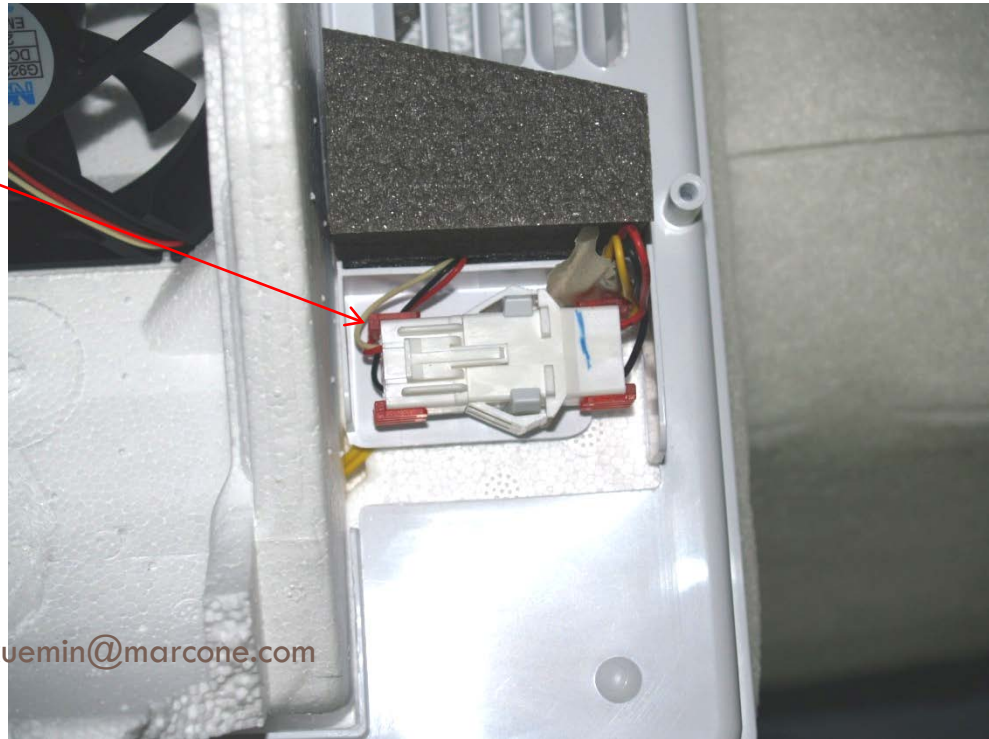
Freezing in Arctic Zone

2005 & 2006 design freezer evap cover for the RM255.
2 connectors: Fan,
Sensor
Dry connector completely, replace Sensor, wrap in foil tape after connecting

New design freezer evap cover for the RM255/RM257. 1 connector: Fan





Questions or comments? Please e-mail richard.kuemin@marcone.com

Accessing Freezer Evaporator

Failure of the Defrost Drain Hose Heater could cause ice build up on freezer floor and cooling issues in Freezer and/or Arctic Zone.

Order evap ass'y to get drain hose with heater

CN73
1-(CN70-9) Cube Mtr
3-(CN70-9) Auger Mtr
5-(CN70-9) Water Solenoid/Valve
7-(CN70-9) Ice Solenoid/Valve

CN72
1-(CN70-9) CR Room Lt 3-(CN70-9)CF Room Lt
5-(CN70-9) R Room Lt 7-(CN70-9) F Room Lt
13-(CN70-9) Compressor 15-CN70 Htr GNDs

CN71
3-1 Dispenser Htr
5-7 Home Bar Htr

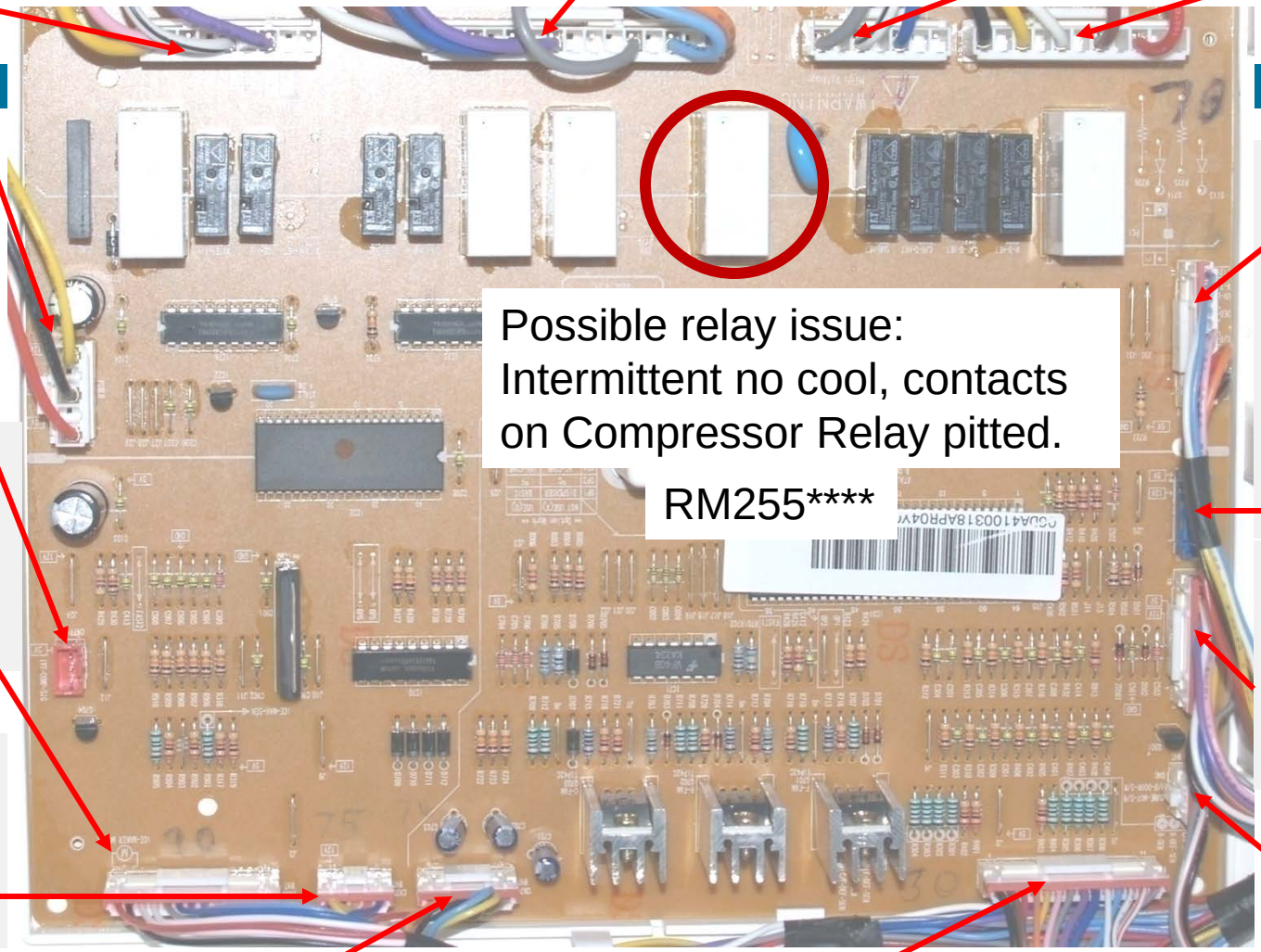
CN70
1-(CN72-15) CR Def Htr
3-(CN72-15) CF Def Htr
5-(CN72-15) R Def & Drain Htr
7-(CN72-15) F Def & Drain Htr

CN78
1 +5 VDC
3 GND
5 +12 VDC

CN77
1 +5 VDC
3 Comp

CN90 Ice Maker
1-2 I/M Motor
3-4 I/M Sensor
5-8 Test Sw
6-8 +5 VDC
7 Hall IC Out

CN75
1 +12 VDC
2 Coil A
3 Coil A Inverse
4 Coil B
5 Coil B Inverse



CN76
1 & 11 +12 VDC
1-2 CF Fan Mtr
3 CF Fan FG
1-4 Ice Pipe Heater
11-5 CR Fan Mtr
6 CR Fan FG
11-10 H2OTank Htr

CN01
2 & 6 GND
5 +12 VDC

CN50 to Display Communication
4-6 +12 VDC
5-6 +5 VDC
8-7 Ice sw
9-7 Water sw
6 GND

CN40
1 Cube Mtr Sw
2 H/B Dr Sw
3 Gnd

CN74
1 C Fan FG 2 R Fan FG
3 F Fan FG 4-7 C Fan Mtr
5-7 R Fan Mtr 6-7 F Fan Mtr
7 GND

CN30
1-7 F Dr Sw 2-7 CF Dr Sw 3-7 F Sensor
4-7 F Def Sensor 5-7 CF Sensor 6-7 CF Def Sensor
8-14 R Dr Sw 9-14 CR Door Sw 10-14 R Sensor
11-14 R Def Sensor 12-14 CR Sensor 13-14 CR Def Sensor

Ext Sensor read 7-8 of F Hinge connector

Questions or comments? Please e-mail richard.kusmin@marcone.com

Service Concerns French Door

Frozen Water Tank Early 2010

- Water Heater – Bad or unplugged
- Fridge Evap Cover – Loose at bottom
- Auto Damper – Cool Zone or Pantry failure
- **RF26X***, RF267AE***, RF267AZ*****
  - **See service bulletin, PCB change required**
- Heater no longer used in 2010 French Door

Questions or comments? Please e-mail richard.kuemin@marcone.com

Water Tanks & Heaters

Questions or comments? Please e-mail richard.kuemin@marcone.com

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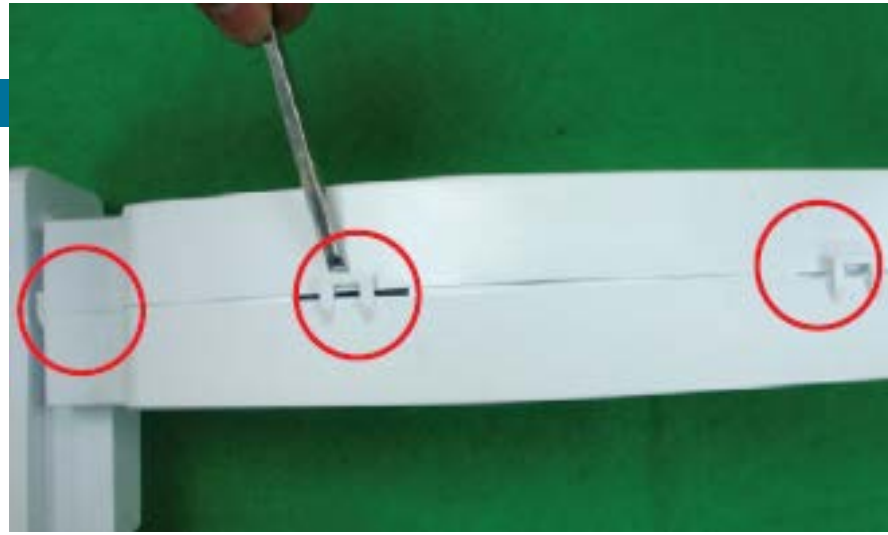
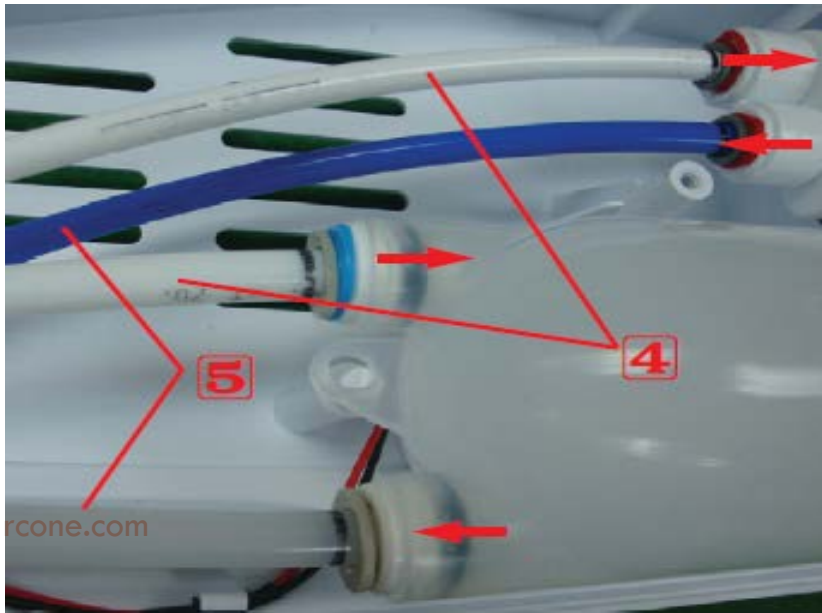
Water Tank-- French 4 door



Water Tank between crispers, no tank heater



Questions or comments? Please e-mail richard.kuemin@marcone.com

Water Filter/Tank Ass'y SxS

No tank heaters in new models, energy savings

Critical Parts Look-up Information

- **Always** get the Serial Number on all products. There are "Running Changes" that have "Bulletins" referring to part number changes at a production Serial Number. If you are looking up parts, ask tech to verify "Serial Number".
- **Always** get the BOM Name on Refrigerators, DO NOT use the Model Number.
- Any Doubt Call Marcone Parts

Questions or comments? Please e-mail richard.kuemin@marcone.com

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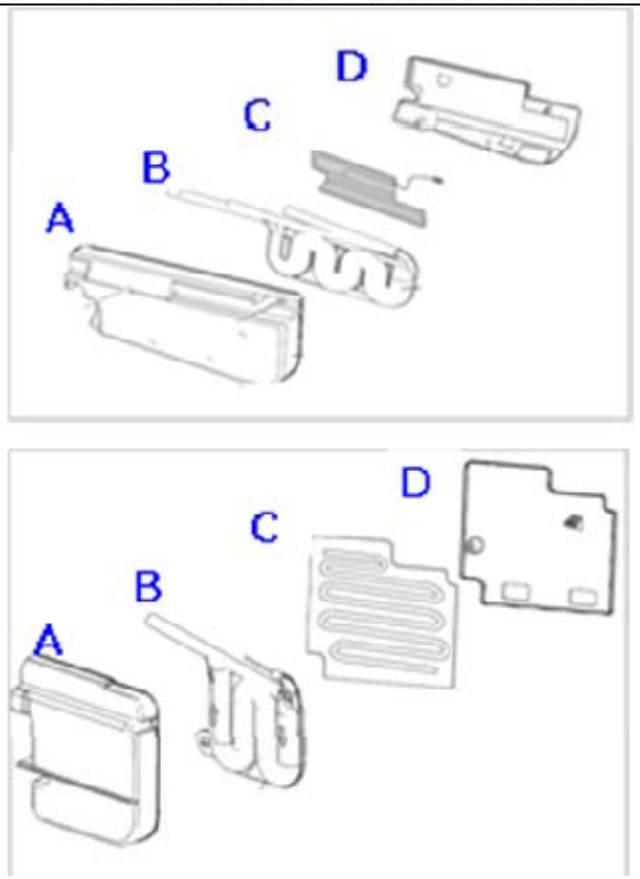
French Door Water Tank/Dispenser

SUBJECT: New Water tank and Water outlet position Parts Change



Changes some models 12/1/2008 and others 1/1/2009

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French Door Bulletin

- SUBJECT: Parts change for the Freezer Door and Handle and Caps. The freezer door and latch assembly has been modified with a rocker handle to improve performance. The new design uses a new door, and two new caps for either side.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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French Door Bulletin

RF266AZ**/XAA , RF267AZ**/XAA , RF268AB**/XAA, RF26XAZ**/XAA,
RFG295AB**/XAA, RFG297AB**/XAA, RFG298AA**/XAA, RFG299ABRS/XAA

SUBJECT: Parts Change

Starting with July Production, the interior lighting for the model listed above has been changed from incandescent lighting to **LED lighting**.

The new parts are **NOT interchangeable** with the old parts. Please refer to the Bulletin to determine what month the product was produced.

Many parts changed, like Main PCB

Questions or comments? Please e-mail richard.kuemin@marcone.com

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RF4287HA Display

Remove a screw under the display cover.	
Remove the display cover by pushing it to the right side and pulling it up.	
When assembling Cover-Display, first insert it from leftside and then assemble to rightside.(Check the wire inside.) and knock the display into the case dispenser.	

Questions or comments? Please e-mail richard.kuemin@marcone.com

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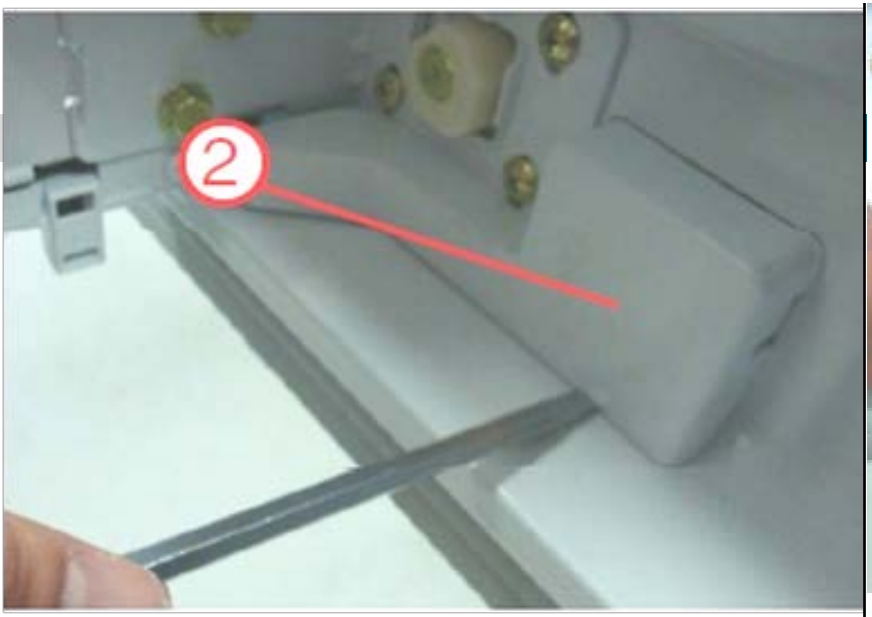
RF4287HA

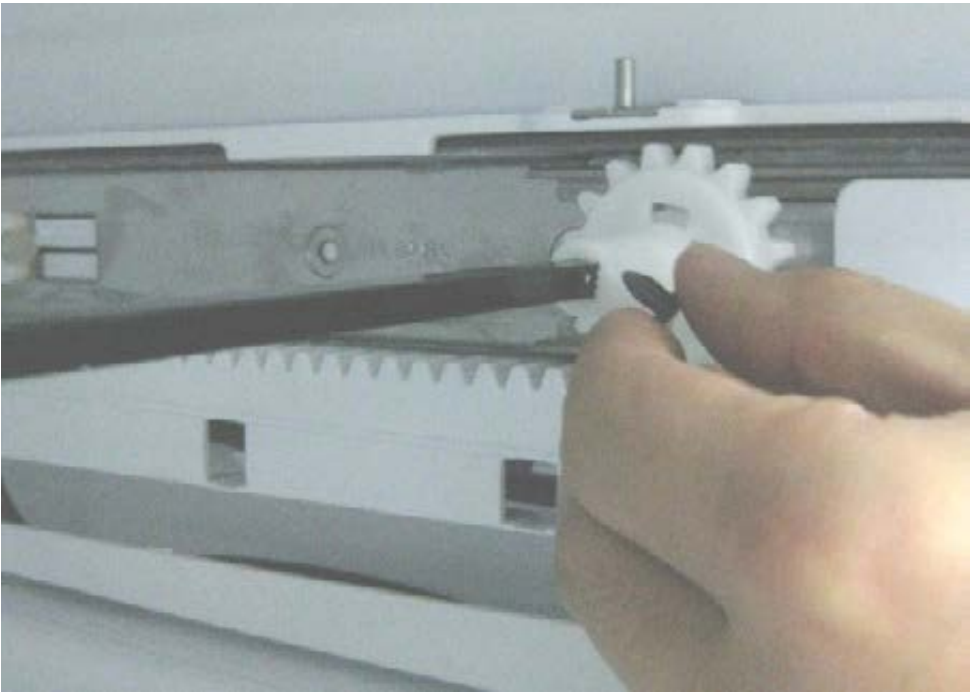
Mid Drawer



Questions or comments? Please e-mail richard.kuemin@marcone.com

RF4287HA Mid Drawer

Accessing alignment rod, gear, & track



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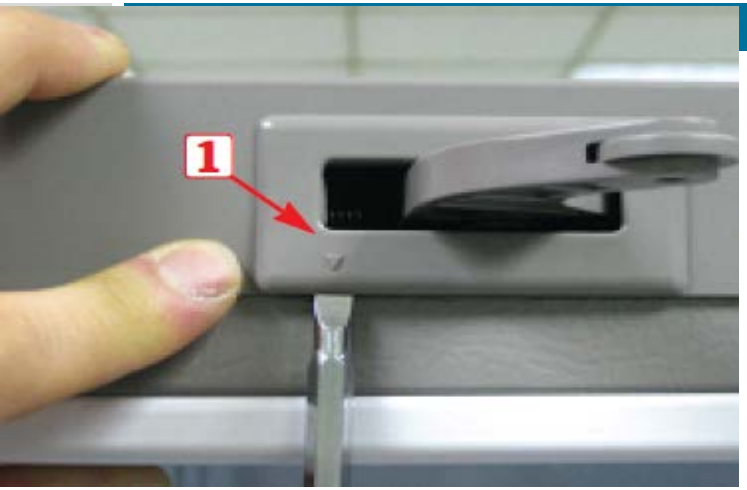
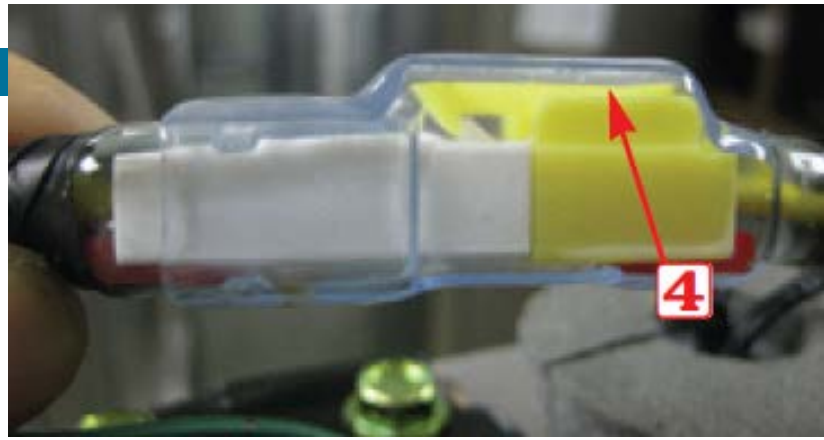
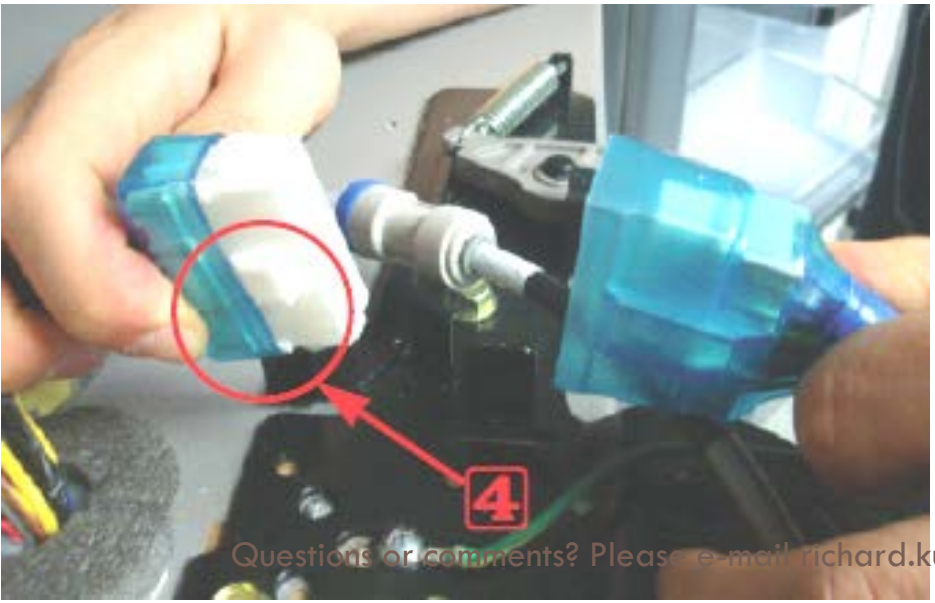
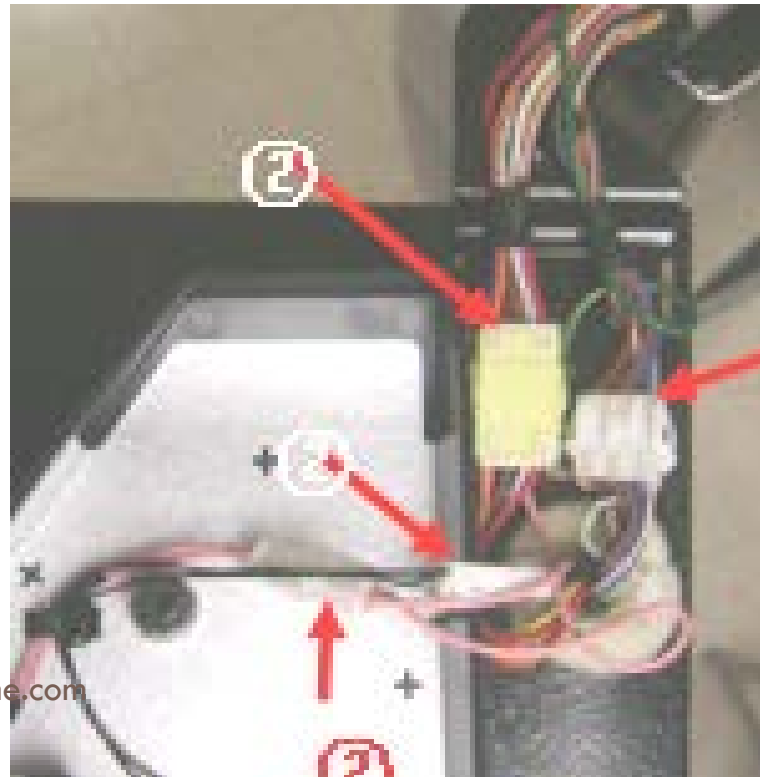
Auger/Front Panel Failure

Installer may have pulled wires loose in connector







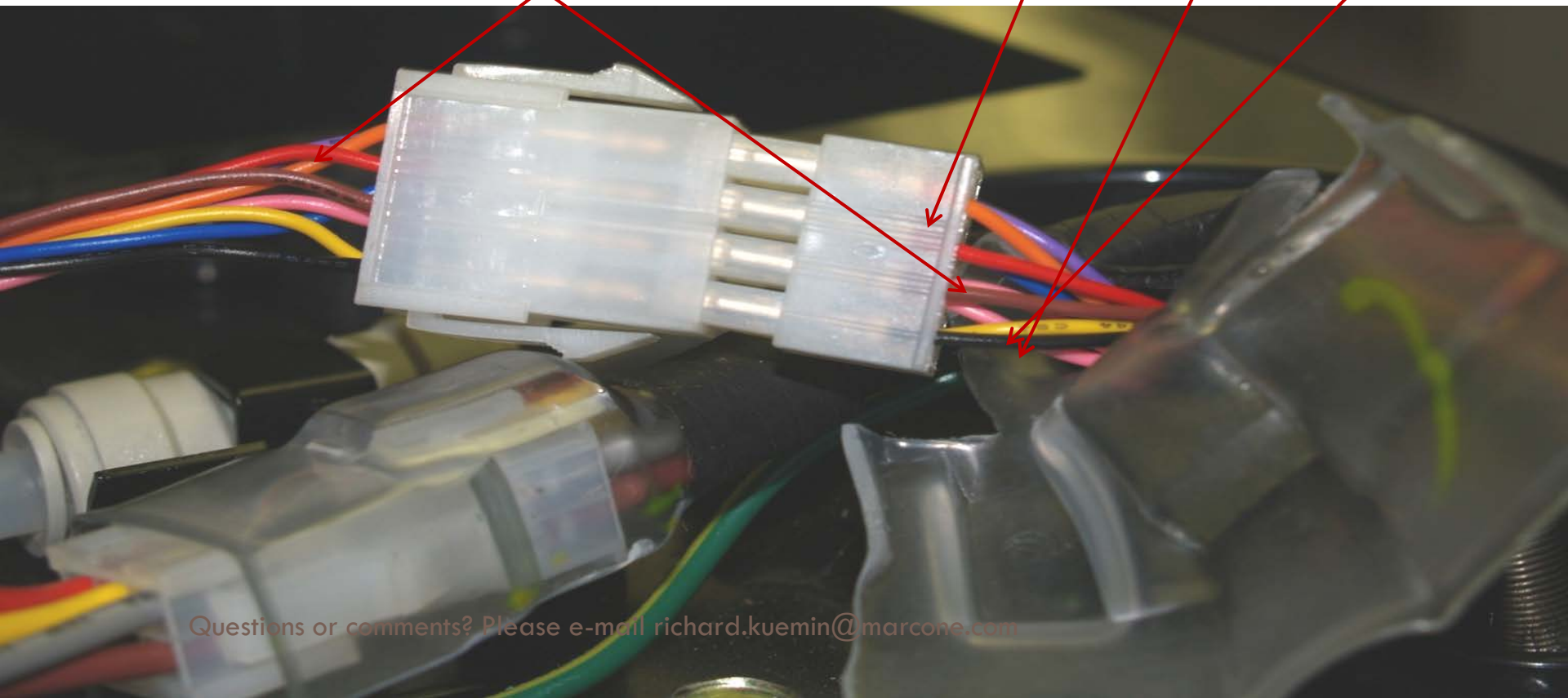


Questions or comments? Please e-mail richard.kuemin@marcone.com

Auger/Front Panel Failure

Installer may have pulled wires loose in connector

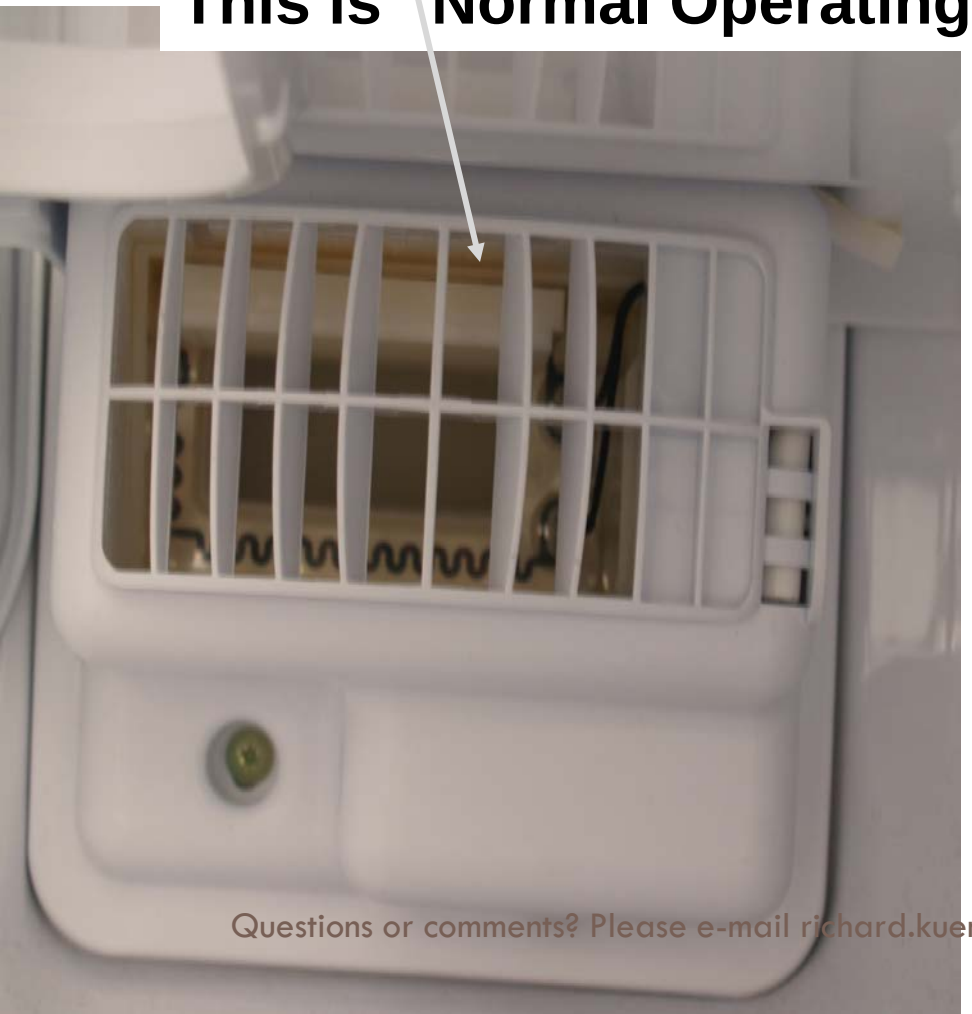
Cut away the plastic cover and black tape from behind Molex connector to free tension on wires
Inspect each connector wire to verify contact
2007 & 2008 production



Questions or comments? Please e-mail richard.kuemin@marcone.com

PANTRY DAMPER

- Possible “Noise” complaint.
  Closes when Fridge door is opened.
  This is “Normal Operating _____”



Questions or comments? Please e-mail richard.kuemin@marcone.com

Service Concerns
RSG SxS

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Critical Parts Look-up Information

- **Always** get the Serial Number on all products. There are "Running Changes" that have "Bulletins" referring to part number changes at a production Serial Number. If you are looking up parts, ask tech to verify "Serial Number".
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- Any Doubt Call Marcone Parts

Questions or comments? Please e-mail richard.kuemin@marcone.com

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RSG Bulletin

SERVICE BULLETIN	
PRODUCT:	Refrigerator
BULLETIN NUMBER:	ASC20100621002
BULLETIN DATE:	June 21, 2010
MODELS:	RSG257AABP/XAA RSG257AAPN/XAA RSG257AARS/XAA RSG257AAWP/XAA

SUBJECT: The parts listed below have been changed to improve energy consumption. The new parts are NOT interchangeable with the old parts. This change was introduced with the June 1, 2010 production. When ordering these parts, please refer to the serial number to ensure you have ordered the correct parts for the model you are servicing.

Units produced before June 2010 are not affected by this change.

Parts List

Part Name	Before June 2010	June 2010 and later
Refrigerator Evaporator Assembly	DA96-00440E	DA96-00673B
Freezer Evaporator Assembly	DA96-00437B	DA96-00672B
Refrigerator Defrost Heater	DA47-00281B	DA47-00321A
Freezer Defrost Heater	DA47-00247G	DA47-00320A
Refrigerator Evaporator Cover	DA97-06097K	DA97-08551E
Freezer Evaporator Cover	DA97-06098D	DA97-06098G
Water Tank	DA97-02650H	DA97-08536B

Questions or comments? Please e-mail richard.kuemin@marcone.com

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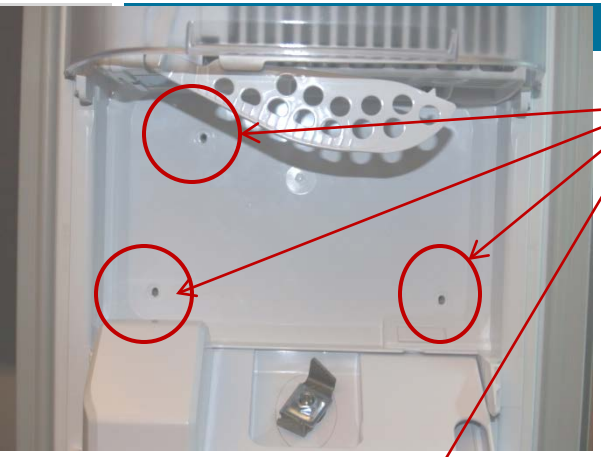
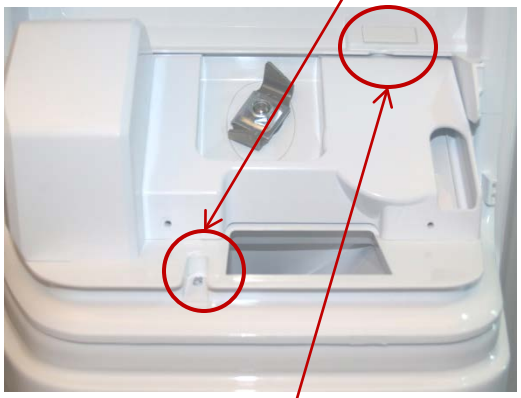
Accessing Ice maker, Auger, Reed Switch-- RSG Models

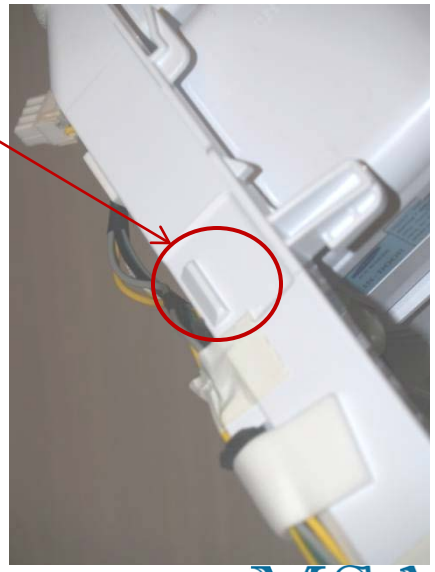


Remove 4 screws

Squeeze in at this point and pull out on auger/ice maker ass'y on the left side

Auger/ice maker ass'y has plastic that locks into the two pieces on the door liner





Ice bucket reed switch, Ice Off LED flashes if bucket/magnet is not in place

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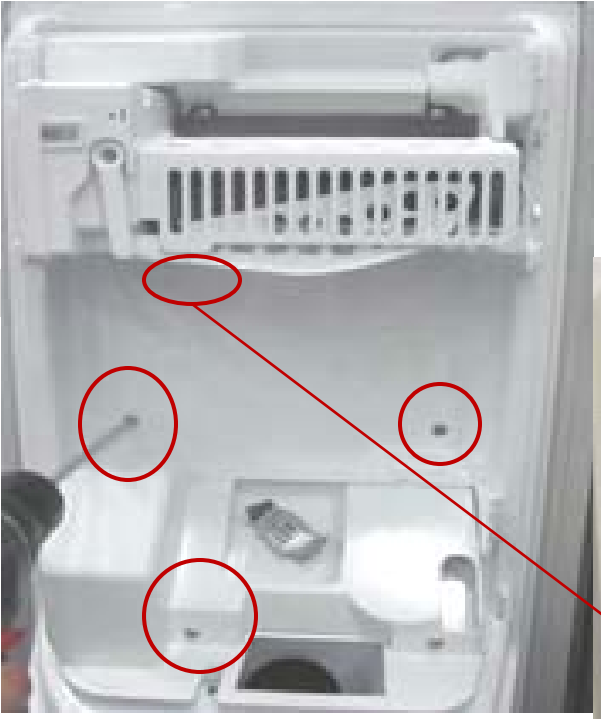
RS265/267TD



Same design as the RSG 257

Questions or comments? Please e-mail richard.kuemin@marcone.com

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RSG Auger/Ice maker ass'y

Wiring harnesses are behind ass'y

Door & Connector changes by serial #, they will not match. Order by serial number using service bulletin.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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Critical Parts Look-up Information

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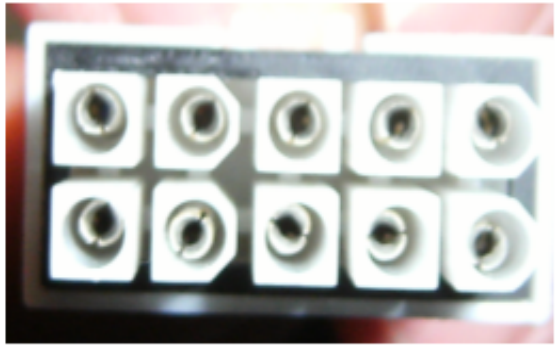
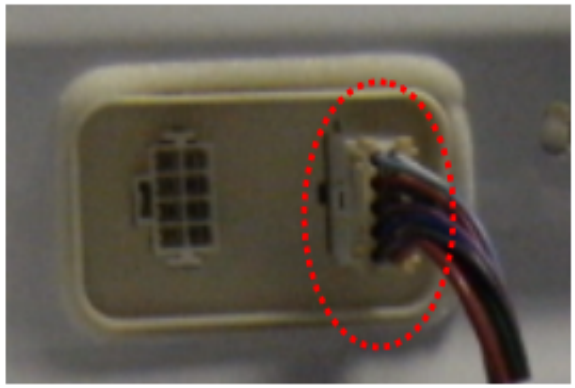
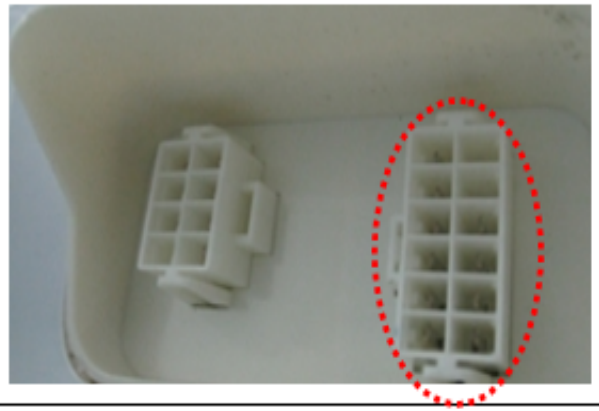
- **Always** get the BOM Name on Refrigerators, DO NOT use the Model Number.
- Any Doubt Call GPCA

Questions or comments? Please e-mail richard.kuemin@marcone.com

RSG I/M Connector Change

New Door, I/M, Auger Case Ass'y

There is no version change, you must order by serial number with the bulletin

	Through Jan 2009 (Serial Q1- S1)	Starting Feb 1 2009 (Serial S2 – Current Production)
Assy Ice maker		
Assy Foam Door Fre		
Remark	Circle Type (10 PIN HOLE)	Square Type (12 PIN HOLE _but 10 PIN Used)

I/M in Freezer Door

Questions or comments? Please e-mail richard.kuemin@marcone.com

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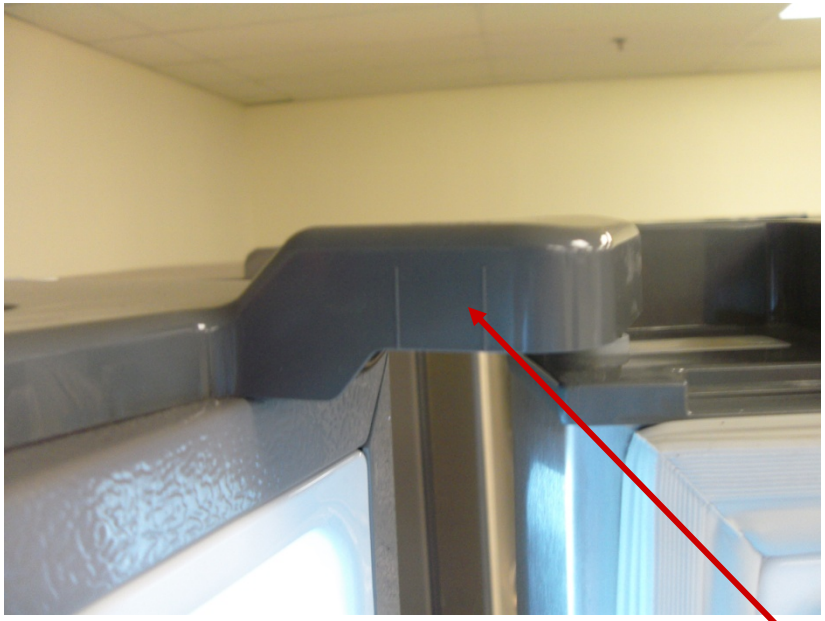

RSG Models
REED SWITCH ISSUES
Installers do not seat the hinge cover properly, causing a no cool in the compartment.

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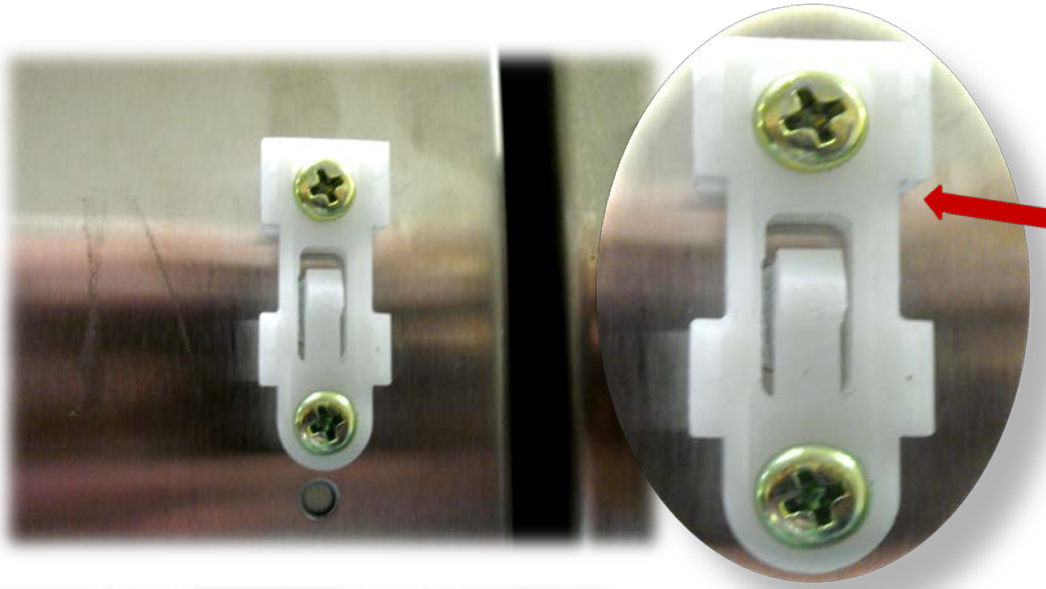
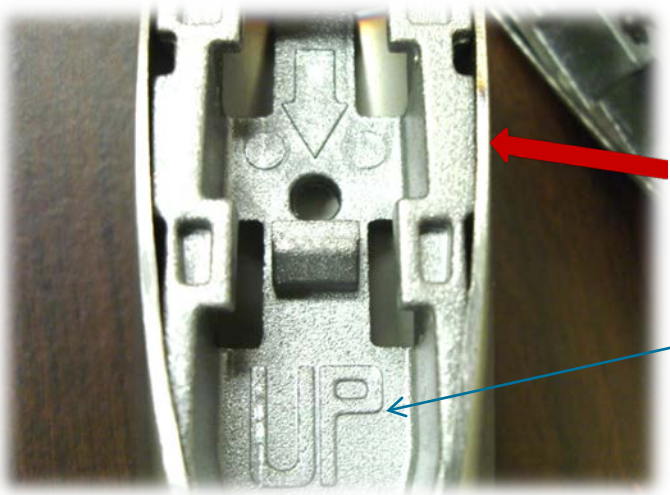
RSG257 ASSY HANDLE-BAR, pulls off



FIXER - HANDLE



HANDLE BAR

UP

LOW

The Handle Bars are labeled on the inside “UP” and “LOW”. This indicates how the handles should be installed on the refrigerator Fixer-Handles.

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RS265/267TD

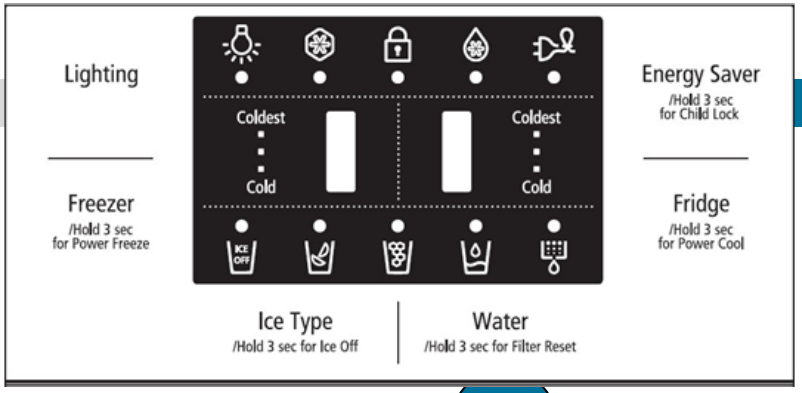
Display wouldn't change, buttons not working:
Screws may have been over tightened, activating one function, locking out all others

RS261MD RS263TD Dispenser issues

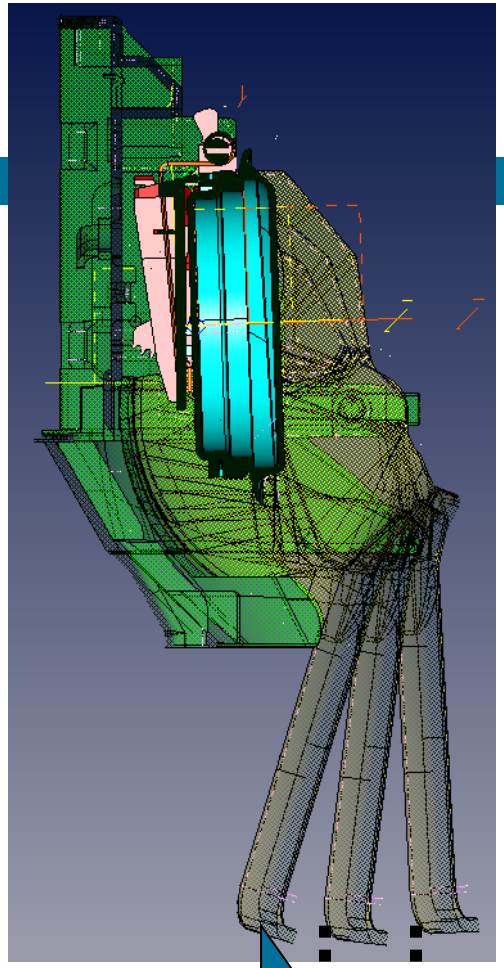
- The models listed above are a new design incorporating a two stage dispenser lever.
- If **Water** is selected press the lever a short distance
- If **Ice** is selected press the lever in until the lever is slightly past straight up and down

Questions or comments? Please e-mail richard.kuemin@marcone.com

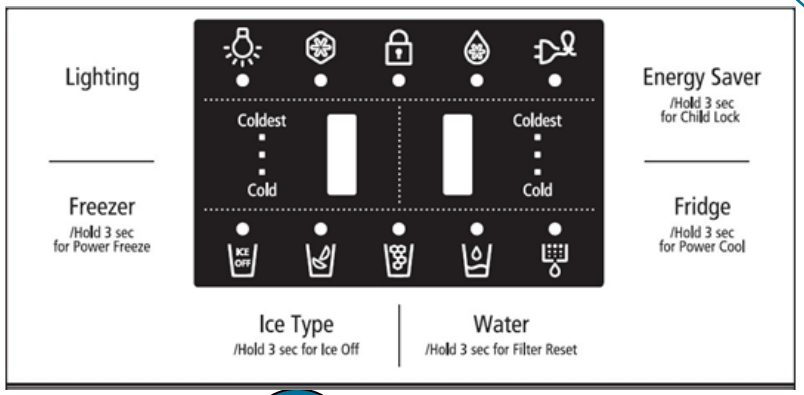
Water



1



ICE



2

Water

ICE

Questions or comments? Please e-mail richard.kuemin@marcone.com

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RS265TD, RS267TD
Fridge Lighting--Normal

Top and Bottom portions have a dark looking appearance, this is **normal**, nothing is burned out.

Questions or comments? Please e-mail richard.luemn@marcone.com

Service Concerns
Single Evaporator SxS

Questions or comments? Please e-mail richard.kuemin@marcone.com

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RS 261MD
Leveling issues

- SUBJECT: Difficulty leveling the refrigerator
- SYMPTOM: Front legs are too short to properly level the refrigerator
- REPAIR: Replace the front foot with the part listed below. The part listed below is almost 1 inch longer than the original part.
- Part Number Description
- ***DA61-04721C FOOT-FRONT***

Questions or comments? Please e-mail richard.kuemin@marcone.com

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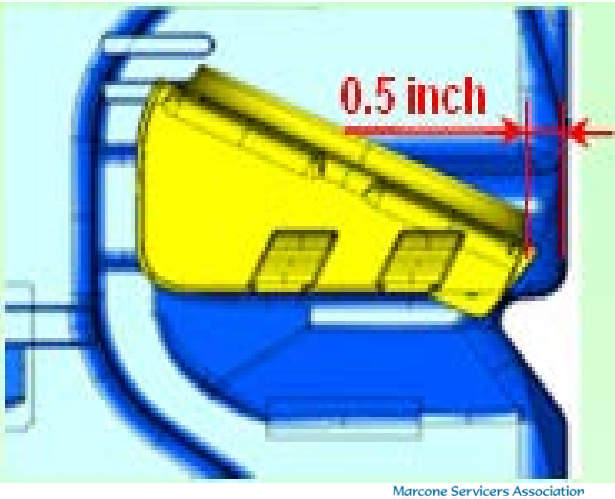
SERVICE BULLETIN	
PRODUCT:	Refrigerator
BULLETIN NUMBER:	ASC20090218001
BULLETIN DATE:	02/18/2009
MODELS:	RS2530, RS2630

SUBJECT: Frost build up around Frz fan and air outlets
SYMPTOM: Insufficient air circulation and heat conduction is causing frost build up around the Freezer Fan & Air Outlet.

SOLUTION:
Replace with Revised part. The number is the same as before (DA97-01948A ASSY SUPPORT-MOTOR FRE)



Questions or comments? Please e-mail richard.kuemin@marcone.com

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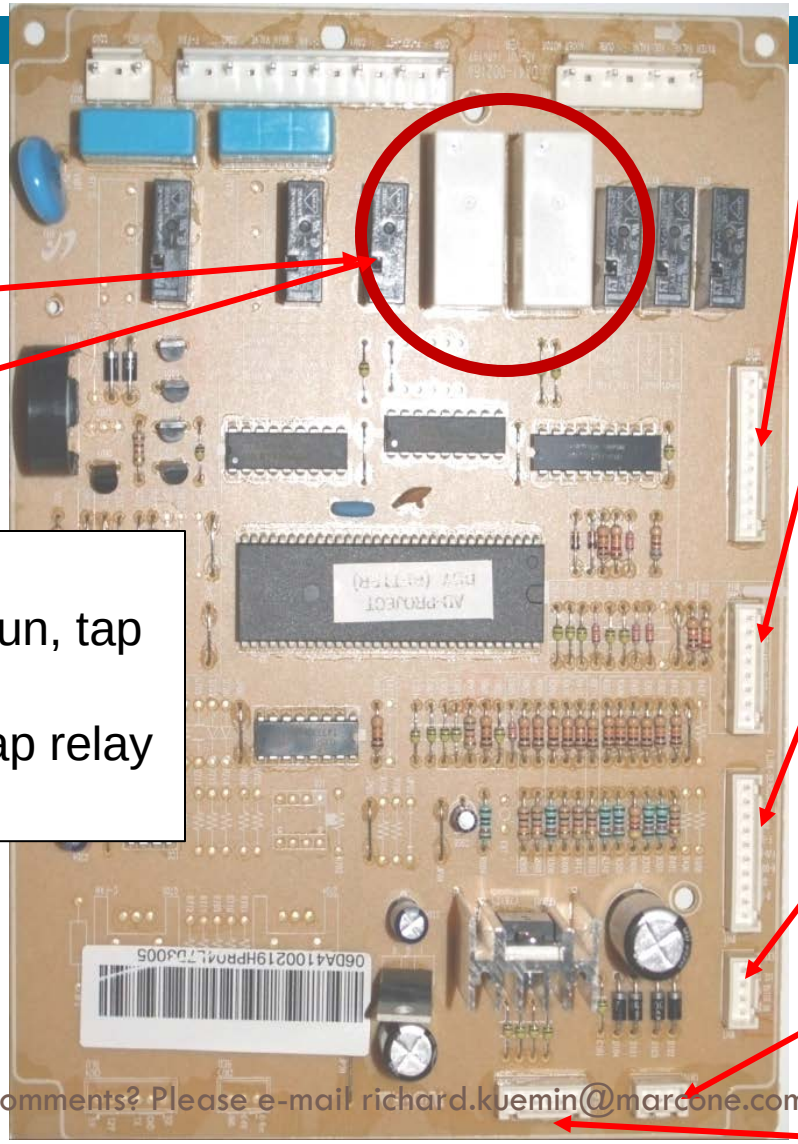
RS2630***/XAA

Possible pitting contact relay issues:
Intermittent no cool or Intermittent defrost



CN50 Panel Display

CN90 Ice Maker
1-2 I/M Motor (Red-Blk)
3-4 I/M Sensor (Wht-Wht)
5-8 Test Sw (Gry-S/Blu)
6-8 Horizontal Sw (Blu-S/Blu)
7-8 Fill Sw (Prp-S/Blu)

CN30
3-4Frz Dr Sw (W/Red-Blk)
7-8 Ref Dr Sw (W/Blu-Blk)
5-4 F-Sensor (Yel-Blk)
6-4 F-Def Sensor (Blu-Blk)
9-8 R-Sensor (Prp-Blk)

CN31 Panel Display
1-4 Ambient Sensor (Wht/Blk-W/Yel)
2-4 Ice Sw (W/Red-W/Yel)
3-4 Water Sw (W/Blu-W/Yel)

CN10 Transformer
12-16VAC Pins 1-3 (Blu-Blu)

CN75 Damper Heater 12VDC Pins 1-2 (Blk-Blk)

Use Forced Mode:
Force compressor run, tap relay to test.
Force defrost and tap relay to test.

Questions or comments? Please e-mail richard.kuemin@marcone.com

Service Concerns
RB Series

Questions or comments? Please e-mail richard.kuemin@marcone.com

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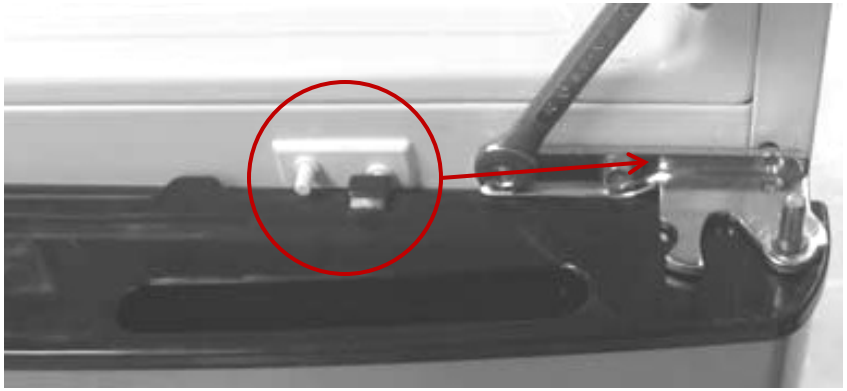
RB Series Door Reversal

Door Switch Issue, creating a no cool-Fridge



The Door Switch must always be on the side the hinge is on. If not, the Fridge door may not always close properly, creating an intermittent Fridge no or poor cooling.

Questions or comments? Please e-mail richard.kuemin@marcone.com

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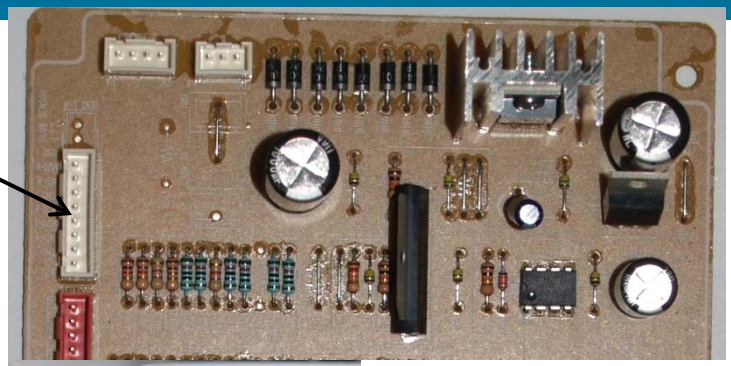
Intermittent No Cool RB Models

CN30
1-2 F Door SW (Blk-Brn)
3-2 F Room Sensor (Yel-Brn) 3.5 ~ 4.2 vdc
4-2 F Def Sensor (Org-Brn) 2.3 ~ 4.2 vdc
5-2 R Door Sw (Wht-Brn)
7-6 R Room Sensor (Blu-Brn) 2.4 ~ 2.8 vdc
8-6 R Def Sensor (Prp-Brn) 2 ~ 4.2 vdc



Possible door switch issue:
Intermittent no cool

The door switch is a 5 vdc switch. A small resistance can cause the circuit not to work.
Test switch with an ohm meter, on low resistance scale. Remove switch, press the switch at least 20 times, if any resistance shows the switch is bad.

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Reed Switch on many new products

Installers are not seating cover properly, creating a no cool

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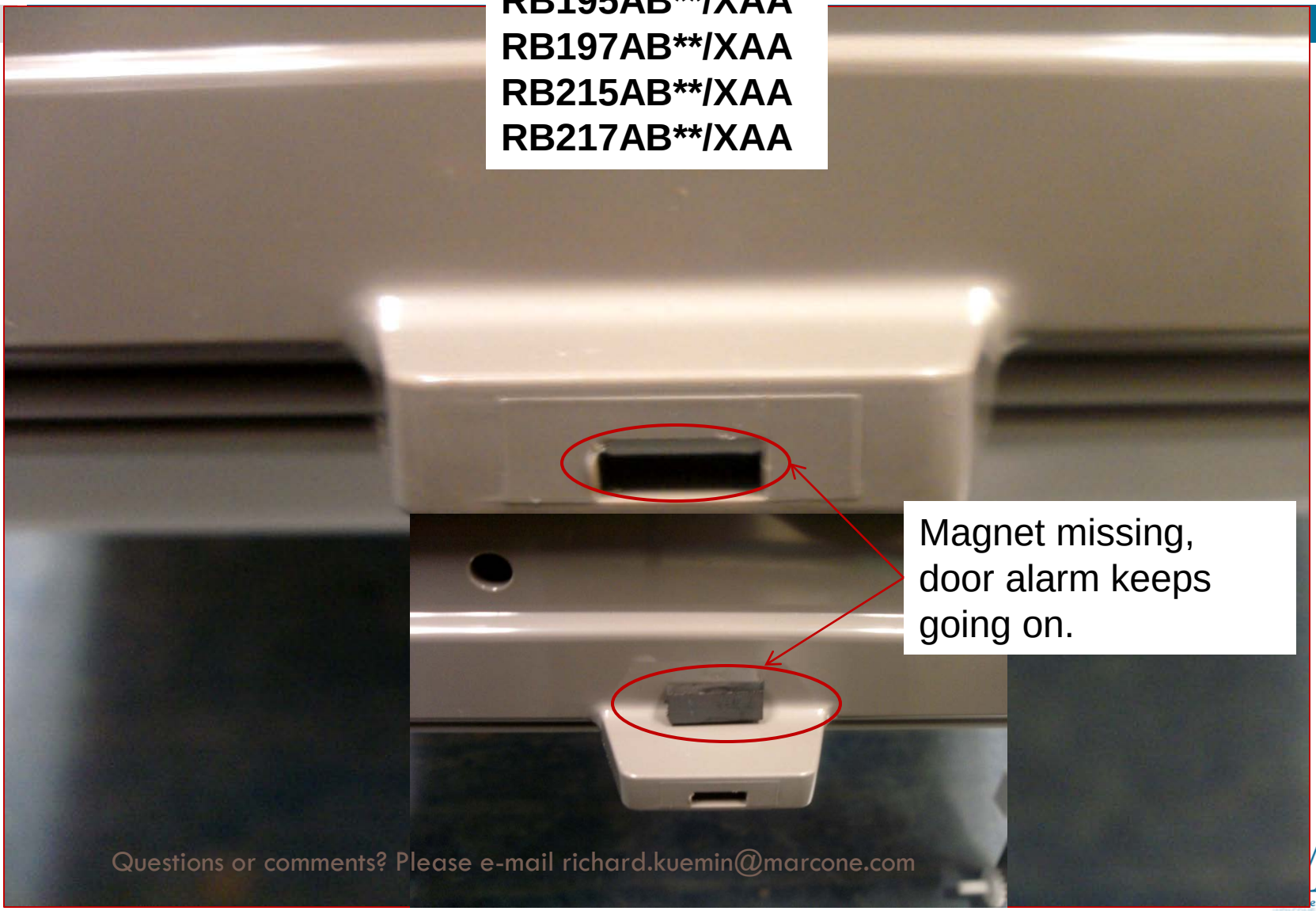
No Cool Freezer

RB195AB/XAA**
RB197AB/XAA**
RB215AB/XAA**
RB217AB/XAA**



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Service Concerns
Older RS Series

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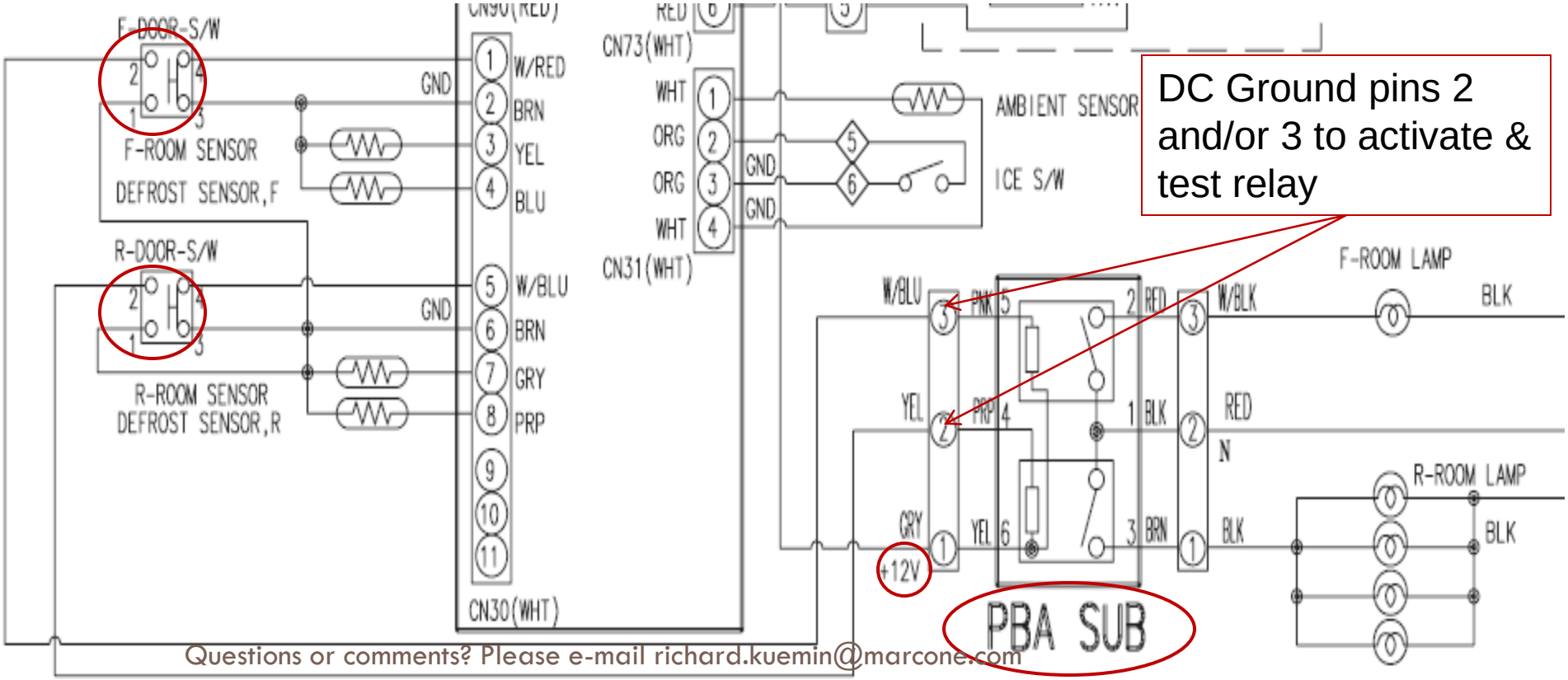
Lamp Circuits

Older models

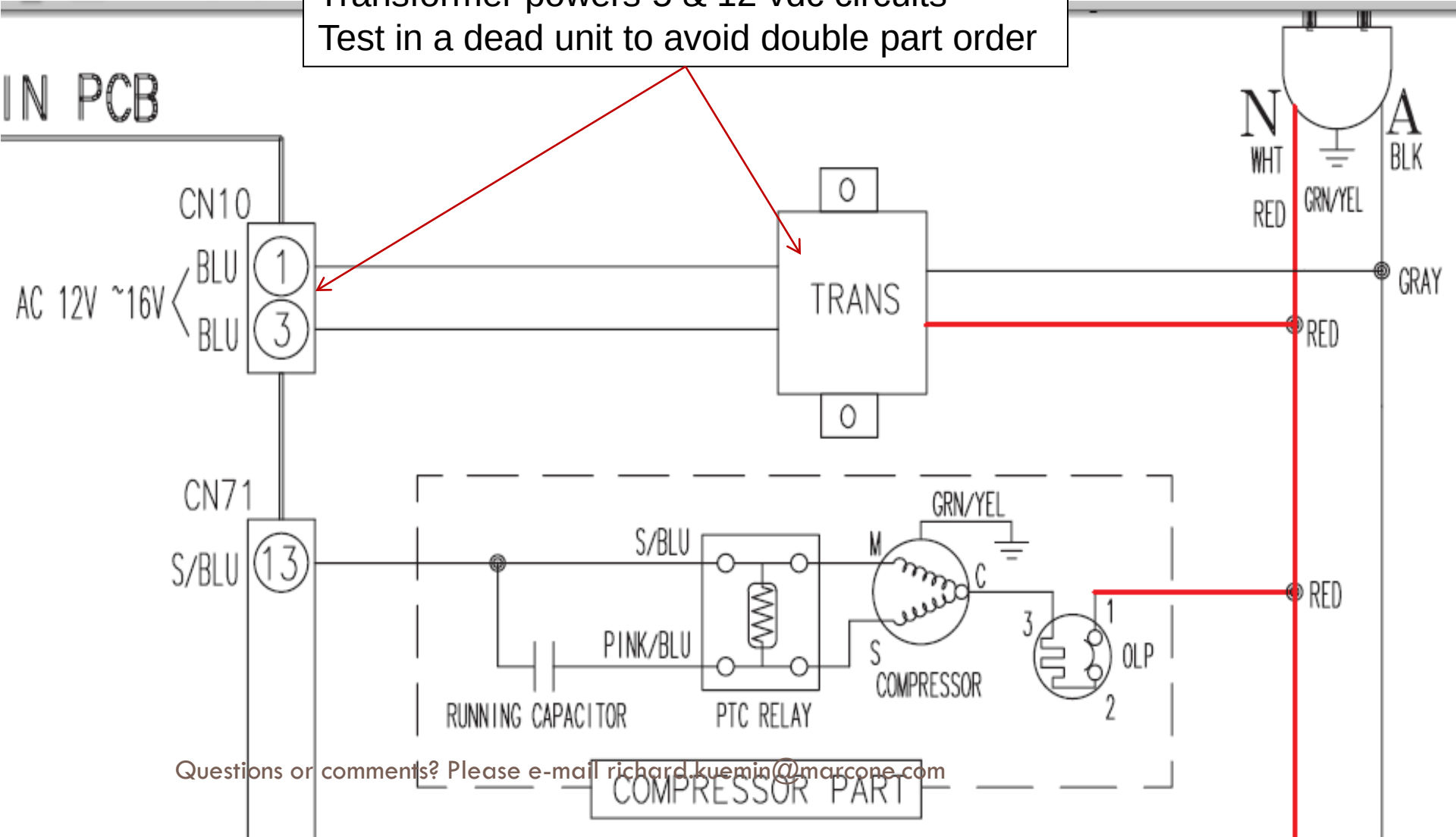
Failure of interior lamps, test PBA Sub



LV Transformer

Older Models

Transformer powers 5 & 12 vdc circuits
Test in a dead unit to avoid double part order



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The Tech is expected to meet higher standards

- What advice would you give to a technician who damages the customer's property by:
  - **Gouging their hardwood floor when they pull the appliances out?**
  - **Tracking mud onto their carpeting?**
  - **Chipping their counter?**
  - **Scratching their appliance?**
  - **Gouging walls or furniture with their tool box?**
  - **Leaking transmission fluid on their driveway?**
  - **Backing over their kid's tricycle?**